

SEQUENCE LISTING

<110> Blumwald, Eduardo

<120> SALT TOLERANT OIL CROPS

<130> 529642000500

<150> US 60/395,656

<151> 2002-07-12

<160> 38

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 2178

<212> DNA

<213> Arabidopsis thaliana

<400> 1

```
cctctctgtt tcgttcctcg tagacgaaga agaagaagaa tctcaggttt tagctttcga 60
agctttccaaa attttgaatt ttgatcttct gggctctttt gtaaatacaga ctgaagatat 120
ttagattacc cagaagtgtg tcaaggaatg gtttcagtgg acagcacgga aagataaaaag 180
agactttttt ttccagatth ttctgatcca aaatctgaat agttgttcat gttcttggtg 240
caaactctgga aagaggaagt ttgttggtatc tagaagaaga taacaatggt ggattctcta 300
gtgtcgaaac tgccttcgtt atcgacatct gatcacgctt ctgtgggttg gttgaatctc 360
tttgttgcaac ttctttgtgc ttgtattgtt cttggtcacc ttttggaaga gaatagatgg 420
atgaacgaat ccatcacgcg cttgttgatt gggctaggca ctggtgttac cttttgttg 480
attagtaaag gaaaaagctc gcatcttctc gtcttttagt aagatctttt cttcatatat 540
cttttgccac ccattatatt caatgcaggg tttcaagtaa aaaagaagca gtttttccgc 600
aatctcgtga ctattatgct ttttggtgct gttgggacta ttatttcttg cacaatcata 660
tctctaggtg taacacagtt ctttaagaag ttggacattg gaacctttga cttgggtgat 720
tatcttgcta ttggtgccat atttgctgca acagattcag tatgtacact gcaggttctg 780
aatcaagacg agacaccttt gctttacagt cttgtattcg gagagggtgt tgtgaatgat 840
gcaacgtcag ttgtggtctt caacgcgatt cagagctttg atctcactca cctaaaccac 900
gaagctgctt ttcattctct tggaaacttc ttgtatttgt ttctcctaag taccttgctt 960
ggtgctgcaa ccggtctgat aagtgcgtat gttatcaaga agctatactt tggaaggcac 1020
tcaactgacc gagaggttgc cttatgatg cttatggcgt atctttctta tatgcttgct 1080
gagcttttct acttgagcgg tatcctcact gtgtttttct gtggtattgt gatgtcccat 1140
tacacatggc acaatgtaac ggagagctca agaataacaa caaagcatac ctttgcaact 1200
ttgtcatttc ttgcggagac atttattttc ttgtatgttg gaatggatgc cttggacatt 1260
gacaagtgga gatccgtgag tgacacaccg ggaacatcga tcgcagtgag ctcaatccta 1320
atgggtctgg tcatggttgg aagagcagcg ttcgtctttc cgttatcgtt tctatctaac 1380
ttagccaaga agaatacaag cgagaaaatc aactttaaca tgcaggttgt gatttggtgg 1440
tctggtctca tgagaggtgc tgtatctatg gctcttgcat acaacaagtt tacaagggcc 1500
gggcacacag atgtacgcgg gaatgcaatc atgatcacga gtacgataac tgtctgtctt 1560
tttagcacag tgggtgttgg tatgctgacc aaaccactca taagctacct attaccgcac 1620
cagaacgcca ccacgagcat gttatctgat gacaacaccc caaaatccat acatatccct 1680
ttgttggtgacc aagactcggt cattgagcct tcagggaacc acaatgtgcc tcggcctgac 1740
agtatacgtg gcttcttgac acggcccact cgaaccgtgc attactactg gagacaattt 1800
gatgactcct tcatgcgacc cgtcttttga ggtcgtggct ttgtaccctt tgttccaggt 1860
tctccaactg agagaaaccc tctgatctt agtaaggctt gagggtaacg tggaagaaaa 1920
gctttgattt tttttggtag aaaagggtga ttcaaattat gcttttgtgt aaattatcca 1980
tttgtaatat tgtttgtgag gacagaaatc tgtcctaacg ttttgagagc agaaagcaaa 2040
```

acatggcaac tttgaagtgt ttgattgatg tatgtaatta tattcatatt tgttttgttg 2100
 taacacaaac tacacatttg tttatgtttt gaatttgggt tttgcttcga aaaaaaaaaa 2160
 aaaaaaaaaa aaaaaaaaaa 2178

<210> 2

<211> 538

<212> PRT

<213> Arabidopsis thaliana

<400> 2

Met	Leu	Asp	Ser	Leu	Val	Ser	Lys	Leu	Pro	Ser	Leu	Ser	Thr	Ser	Asp
1				5					10					15	
His	Ala	Ser	Val	Val	Ala	Leu	Asn	Leu	Phe	Val	Ala	Leu	Leu	Cys	Ala
			20					25					30		
Cys	Ile	Val	Leu	Gly	His	Leu	Leu	Glu	Glu	Asn	Arg	Trp	Met	Asn	Glu
		35					40					45			
Ser	Ile	Thr	Ala	Leu	Leu	Ile	Gly	Leu	Gly	Thr	Gly	Val	Thr	Ile	Leu
	50					55					60				
Leu	Ile	Ser	Lys	Gly	Lys	Ser	Ser	His	Leu	Leu	Val	Phe	Ser	Glu	Asp
65					70					75				80	
Leu	Phe	Phe	Ile	Tyr	Leu	Leu	Pro	Pro	Ile	Ile	Phe	Asn	Ala	Gly	Phe
				85					90					95	
Gln	Val	Lys	Lys	Lys	Gln	Phe	Phe	Arg	Asn	Phe	Val	Thr	Ile	Met	Leu
		100						105					110		
Phe	Gly	Ala	Val	Gly	Thr	Ile	Ile	Ser	Cys	Thr	Ile	Ile	Ser	Leu	Gly
	115					120						125			
Val	Thr	Gln	Phe	Phe	Lys	Lys	Leu	Asp	Ile	Gly	Thr	Phe	Asp	Leu	Gly
	130					135						140			
Asp	Tyr	Leu	Ala	Ile	Gly	Ala	Ile	Phe	Ala	Ala	Thr	Asp	Ser	Val	Cys
145					150					155					160
Thr	Leu	Gln	Val	Leu	Asn	Gln	Asp	Glu	Thr	Pro	Leu	Leu	Tyr	Ser	Leu
			165					170						175	
Val	Phe	Gly	Glu	Gly	Val	Val	Asn	Asp	Ala	Thr	Ser	Val	Val	Val	Phe
		180						185					190		
Asn	Ala	Ile	Gln	Ser	Phe	Asp	Leu	Thr	His	Leu	Asn	His	Glu	Ala	Ala
	195						200					205			
Phe	His	Leu	Leu	Gly	Asn	Phe	Leu	Tyr	Leu	Phe	Leu	Leu	Ser	Thr	Leu
	210				215						220				
Leu	Gly	Ala	Ala	Thr	Gly	Leu	Ile	Ser	Ala	Tyr	Val	Ile	Lys	Lys	Leu
225					230					235					240
Tyr	Phe	Gly	Arg	His	Ser	Thr	Asp	Arg	Glu	Val	Ala	Leu	Met	Met	Leu
			245						250					255	
Met	Ala	Tyr	Leu	Ser	Tyr	Met	Leu	Ala	Glu	Leu	Phe	Asp	Leu	Ser	Gly
		260					265						270		
Ile	Leu	Thr	Val	Phe	Phe	Cys	Gly	Ile	Val	Met	Ser	His	Tyr	Thr	Trp
	275					280						285			
His	Asn	Val	Thr	Glu	Ser	Ser	Arg	Ile	Thr	Thr	Lys	His	Thr	Phe	Ala
	290					295					300				
Thr	Leu	Ser	Phe	Leu	Ala	Glu	Thr	Phe	Ile	Phe	Leu	Tyr	Val	Gly	Met
305					310					315					320
Asp	Ala	Leu	Asp	Ile	Asp	Lys	Trp	Arg	Ser	Val	Ser	Asp	Thr	Pro	Gly
			325						330				335		
Thr	Ser	Ile	Ala	Val	Ser	Ser	Ile	Leu	Met	Gly	Leu	Val	Met	Val	Gly
		340					345						350		
Arg	Ala	Ala	Phe	Val	Phe	Pro	Leu	Ser	Phe	Leu	Ser	Asn	Leu	Ala	Lys
	355					360						365			
Lys	Asn	Gln	Ser	Glu	Lys	Ile	Asn	Phe	Asn	Met	Gln	Val	Val	Ile	Trp

370		375		380
Trp Ser Gly Leu Met Arg Gly Ala Val Ser Met Ala Leu Ala Tyr Asn				
385		390		400
Lys Phe Thr Arg Ala Gly His Thr Asp Val Arg Gly Asn Ala Ile Met				
	405		410	415
Ile Thr Ser Thr Ile Thr Val Cys Leu Phe Ser Thr Val Val Phe Gly				
	420		425	430
Met Leu Thr Lys Pro Leu Ile Ser Tyr Leu Leu Pro His Gln Asn Ala				
	435		440	445
Thr Thr Ser Met Leu Ser Asp Asp Asn Thr Pro Lys Ser Ile His Ile				
	450		455	460
Pro Leu Leu Asp Gln Asp Ser Phe Ile Glu Pro Ser Gly Asn His Asn				
465		470		480
Val Pro Arg Pro Asp Ser Ile Arg Gly Phe Leu Thr Arg Pro Thr Arg				
	485		490	495
Thr Val His Tyr Tyr Trp Arg Gln Phe Asp Asp Ser Phe Met Arg Pro				
	500		505	510
Val Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro Thr				
	515		520	525
Glu Arg Asn Pro Pro Asp Leu Ser Lys Ala				
530		535		

<210> 3
 <211> 542
 <212> PRT
 <213> Ipomoea nil

<400> 3
Met Ala Phe Gly Leu Ser Ser Leu Leu Gln Asn Ser Asp Leu Phe Thr
1 5 10 15
Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala Leu Leu
20 25 30
Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg Trp Val
35 40 45
Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Cys Thr Gly Val Val
50 55 60
Ile Leu Leu Leu Ser Gly Gly Lys Ser Ser His Leu Leu Val Phe Ser
65 70 75 80
Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala
85 90 95
Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Val Asn Phe Met Thr Ile
100 105 110
Met Leu Phe Gly Ala Ile Gly Thr Leu Ile Ser Cys Ser Ile Ile Ser
115 120 125
Phe Gly Ala Val Lys Ile Phe Lys His Leu Asp Ile Asp Phe Leu Asp
130 135 140
Phe Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr Asp Ser
145 150 155 160
Val Cys Thr Leu Gln Val Leu Ser Gln Asp Glu Thr Pro Leu Leu Tyr
165 170 175
Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val
180 185 190
Leu Phe Asn Ala Ile Gln Ser Phe Asp Met Thr Ser Phe Asp Pro Lys
195 200 205
Ile Gly Leu His Phe Ile Gly Asn Phe Leu Tyr Leu Phe Leu Ser Ser
210 215 220

Thr Phe Leu Gly Val Gly Ile Gly Leu Leu Cys Ala Tyr Ile Ile Lys
 225 230 235 240
 Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu Met
 245 250 255
 Met Leu Met Ser Tyr Leu Ser Tyr Ile Met Ala Glu Leu Phe Tyr Leu
 260 265 270
 Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His Tyr
 275 280 285
 Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Arg His Ser
 290 295 300
 Phe Ala Thr Leu Ser Phe Val Ala Glu Thr Phe Ile Phe Leu Tyr Val
 305 310 315 320
 Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Lys Phe Val Lys Asn Ser
 325 330 335
 Gln Gly Leu Ser Val Ala Val Ser Ser Ile Leu Val Gly Leu Ile Leu
 340 345 350
 Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn Leu
 355 360 365
 Ala Lys Lys Asn Ser Ser Asp Lys Ile Ser Phe Arg Gln Gln Ile Ile
 370 375 380
 Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile Ala Leu Ala
 385 390 395 400
 Tyr Asn Lys Phe Thr Thr Ser Gly His Thr Ser Leu His Glu Asn Ala
 405 410 415
 Ile Met Ile Thr Ser Thr Val Thr Val Val Leu Phe Ser Thr Val Val
 420 425 430
 Phe Gly Leu Met Thr Lys Pro Leu Ile Asn Leu Leu Leu Pro Pro His
 435 440 445
 Lys Gln Met Pro Ser Gly His Ser Ser Met Thr Thr Ser Glu Pro Ser
 450 455 460
 Ser Pro Lys His Phe Thr Val Pro Leu Leu Asp Asn Gln Pro Asp Ser
 465 470 475 480
 Glu Ser Asp Met Ile Thr Gly Pro Glu Val Ala Arg Pro Thr Ala Leu
 485 490 495
 Arg Met Leu Leu Arg Thr Pro Thr His Thr Val His Arg Tyr Trp Arg
 500 505 510
 Lys Phe Asp Asp Ser Phe Met Arg Pro Val Phe Gly Gly Arg Gly Phe
 515 520 525
 Val Pro Phe Val Ala Gly Ser Pro Val Glu Gln Ser Pro Arg
 530 535 540

<210> 4

<211> 556

<212> PRT

<213> Suaeda maritima

<400> 4

Met Leu Ser Gln Leu Ser Ser Phe Phe Ala Ser Lys Met Asp Met Val
 1 5 10 15
 Ser Thr Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala
 20 25 30
 Leu Leu Arg Gly Cys Ile Val Ile Gly His Leu Leu Glu Asn Arg
 35 40 45
 Trp Met Asn Glu Ser Ile Thr Ala Leu Leu Ile Gly Leu Ser Thr Gly
 50 55 60
 Ile Ile Ile Leu Leu Ile Ser Gly Gly Lys Ser Ser His Leu Leu Val

65					70					75					80
Phe	Ser	Glu	Asp	Leu	Phe	Phe	Ile	Tyr	Leu	Leu	Pro	Pro	Ile	Ile	Phe
				85					90					95	
Asn	Ala	Gly	Phe	Gln	Val	Lys	Lys	Lys	Gln	Phe	Phe	Arg	Asn	Phe	Ile
			100					105					110		
Thr	Ile	Ile	Leu	Phe	Gly	Ala	Val	Gly	Thr	Leu	Val	Ser	Phe	Ile	Ile
		115					120					125			
Ile	Ser	Leu	Gly	Ser	Ile	Ala	Ile	Phe	Gln	Lys	Met	Asp	Ile	Gly	Ser
	130					135					140				
Leu	Glu	Leu	Gly	Asp	Leu	Leu	Ala	Ile	Gly	Ala	Ile	Phe	Ala	Ala	Thr
145				150						155					160
Asp	Ser	Val	Cys	Thr	Leu	Gln	Val	Leu	Asn	Gln	Asp	Glu	Thr	Pro	Leu
				165					170					175	
Leu	Tyr	Ser	Leu	Val	Phe	Gly	Glu	Gly	Val	Val	Asn	Asp	Ala	Thr	Ser
			180					185					190		
Val	Val	Leu	Phe	Asn	Ala	Ile	Gln	Asn	Phe	Asp	Leu	Thr	His	Ile	Asp
		195					200					205			
His	Arg	Ile	Ala	Phe	Gln	Phe	Gly	Gly	Asn	Phe	Leu	Tyr	Leu	Phe	Phe
	210					215					220				
Ala	Ser	Thr	Leu	Leu	Gly	Ala	Val	Thr	Gly	Leu	Leu	Ser	Ala	Tyr	Val
225					230					235					240
Ile	Lys	Lys	Leu	Tyr	Phe	Gly	Arg	His	Ser	Thr	Asp	Arg	Glu	Val	Ala
				245					250					255	
Leu	Met	Met	Leu	Met	Ala	Tyr	Leu	Ser	Tyr	Met	Leu	Ala	Glu	Leu	Phe
			260					265					270		
Tyr	Leu	Ser	Gly	Ile	Leu	Thr	Val	Phe	Phe	Cys	Gly	Ile	Val	Met	Ser
		275					280					285			
His	Tyr	Thr	Trp	His	Asn	Val	Thr	Glu	Ser	Ser	Arg	Val	Thr	Thr	Lys
	290					295					300				
His	Ala	Phe	Ala	Thr	Leu	Ser	Phe	Val	Ala	Glu	Ile	Phe	Ile	Phe	Leu
305					310					315					320
Tyr	Val	Gly	Met	Asp	Ala	Leu	Asp	Ile	Glu	Lys	Trp	Arg	Phe	Val	Ser
				325					330					335	
Asp	Ser	Pro	Gly	Thr	Ser	Val	Ala	Val	Ser	Ser	Ile	Leu	Leu	Gly	Leu
			340					345					350		
His	Met	Val	Gly	Arg	Ala	Ala	Phe	Val	Phe	Pro	Phe	Ala	Phe	Leu	Met
	355					360						365			
Asn	Leu	Ser	Lys	Lys	Ser	Asn	Ser	Glu	Lys	Val	Thr	Phe	Asn	Gln	Gln
	370					375					380				
Ile	Val	Ile	Trp	Trp	Ala	Gly	Leu	Met	Lys	Ser	Ala	Val	Ser	Val	Ala
385					390					395					400
Leu	Ala	Tyr	Asn	Gln	Phe	Ser	Arg	Ser	Gly	His	Thr	Gln	Leu	Arg	Gly
			405						410					415	
Asn	Ala	Ile	Met	Ile	Thr	Ser	Thr	Ile	Thr	Val	Val	Leu	Phe	Ser	Thr
		420						425					430		
Met	Val	Phe	Gly	Leu	Leu	Thr	Lys	Pro	Leu	Ile	Leu	Phe	Met	Leu	Pro
	435					440						445			
Gln	Pro	Lys	His	Phe	Thr	Ser	Ala	Ser	Thr	Val	Ser	Asp	Leu	Gly	Ser
	450					455					460				
Pro	Lys	Ser	Phe	Ser	Leu	Pro	Leu	Leu	Glu	Asp	Arg	Gln	Asp	Ser	Glu
465					470				475						480
Ala	Asp	Leu	Gly	Asn	Asp	Asp	Glu	Glu	Ala	Tyr	Pro	Arg	Gly	Thr	Ile
			485						490					495	
Ala	Arg	Pro	Thr	Ser	Leu	Arg	Met	Leu	Leu	Asn	Ala	Pro	Thr	His	Thr
		500						505					510		
Val	His	His	Tyr	Trp	Arg	Arg	Phe	Asp	Asp	Tyr	Phe	Met	Arg	Pro	Val
		515					520					525			

Phe	Gly	Gly	Arg	Gly	Phe	Val	Pro	Phe	Val	Pro	Gly	Ser	Pro	Thr	Glu
	530					535					540				
Gln	Ser	Ile	Thr	Asn	Phe	Val	Thr	Glu	Asn	Ile	Ser				
545					550					555					

<210> 5
 <211> 540
 <212> PRT
 <213> Petunia x hybrida

<400> 5

Met	Ala	Phe	Asp	Phe	Gly	Thr	Leu	Leu	Gly	Asn	Val	Asp	Arg	Leu	Ser
1				5					10					15	
Thr	Ser	Asp	His	Gln	Ser	Val	Val	Ser	Ile	Asn	Leu	Phe	Val	Ala	Leu
		20						25				30			
Ile	Cys	Ala	Cys	Ile	Val	Ile	Gly	His	Leu	Leu	Glu	Glu	Asn	Arg	Trp
	35						40					45			
Met	Asn	Glu	Ser	Ile	Thr	Ala	Leu	Val	Ile	Gly	Ser	Cys	Thr	Gly	Ile
	50					55					60				
Val	Ile	Leu	Leu	Ile	Ser	Gly	Gly	Lys	Asn	Ser	His	Ile	Leu	Val	Phe
65				70					75					80	
Ser	Glu	Asp	Leu	Phe	Ile	Tyr	Leu	Leu	Pro	Pro	Ile	Ile	Phe	Asn	
			85				90						95		
Ala	Gly	Phe	Gln	Val	Lys	Lys	Lys	Ser	Phe	Phe	Arg	Asn	Phe	Ser	Thr
			100					105					110		
Ile	Met	Leu	Phe	Gly	Ala	Leu	Gly	Thr	Leu	Ile	Ser	Phe	Ile	Ile	Ile
	115						120					125			
Ser	Leu	Gly	Ala	Ile	Gly	Ile	Phe	Lys	Lys	Met	Asn	Ile	Gly	Ser	Leu
	130				135						140				
Glu	Ile	Gly	Asp	Tyr	Leu	Ala	Ile	Gly	Ala	Ile	Phe	Ser	Ala	Thr	Asp
145				150					155					160	
Ser	Val	Cys	Thr	Leu	Gln	Val	Leu	Asn	Gln	Asp	Glu	Thr	Pro	Leu	Leu
			165					170						175	
Tyr	Ser	Leu	Val	Phe	Gly	Glu	Gly	Val	Val	Asn	Asp	Ala	Thr	Ser	Val
	180							185					190		
Val	Leu	Phe	Asn	Ala	Ile	Gln	Asn	Phe	Asp	Leu	Ser	His	Ile	Asp	Thr
	195						200					205			
Gly	Lys	Ala	Met	Glu	Leu	Val	Gly	Asn	Phe	Leu	Tyr	Leu	Phe	Ala	Ser
	210					215					220				
Ser	Thr	Ala	Leu	Gly	Val	Ala	Ala	Gly	Leu	Leu	Ser	Ala	Tyr	Ile	Ile
225				230					235					240	
Lys	Lys	Leu	Tyr	Phe	Gly	Arg	His	Ser	Thr	Asp	Arg	Glu	Val	Ala	Ile
			245					250						255	
Met	Ile	Leu	Met	Ala	Tyr	Leu	Ser	Tyr	Met	Leu	Ala	Glu	Leu	Phe	Tyr
	260						265					270			
Leu	Ser	Ala	Ile	Leu	Thr	Val	Phe	Phe	Ser	Gly	Ile	Val	Met	Ser	His
	275					280					285				
Tyr	Thr	Trp	His	Asn	Val	Thr	Glu	Ser	Ser	Arg	Val	Thr	Thr	Lys	His
	290					295					300				
Thr	Phe	Ala	Thr	Leu	Ser	Phe	Ile	Ala	Glu	Ile	Phe	Ile	Phe	Leu	Tyr
305				310					315					320	
Val	Gly	Met	Asp	Ala	Leu	Asp	Ile	Glu	Lys	Trp	Lys	Phe	Val	Ser	Asp
			325					330						335	
Ser	Pro	Gly	Ile	Ser	Val	Gln	Val	Ser	Ser	Ile	Leu	Leu	Gly	Leu	Val
	340						345						350		
Leu	Val	Gly	Arg	Ala	Ala	Phe	Val	Phe	Pro	Leu	Ser	Phe	Leu	Ser	Asn

Thr Ala Lys Ala Phe Glu Leu Val Gly Asn Phe Phe Tyr Leu Phe Ala
 210 215 220
 Thr Ser Thr Val Leu Gly Val Leu Thr Gly Leu Leu Ser Ala Tyr Ile
 225 230 235 240
 Ile Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala
 245 250 255
 Ile Met Ile Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe
 260 265 270
 Asp Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser
 275 280 285
 His Tyr Thr Trp His Asn Val Thr Glu Asn Ser Arg Val Thr Thr Lys
 290 295 300
 His Thr Phe Ala Thr Leu Ser Phe Val Ala Glu Ile Phe Ile Phe Leu
 305 310 315 320
 Tyr Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Arg Phe Val Ser
 325 330 335
 Gly Ser Met Thr Thr Ser Ala Ala Val Ser Ala Thr Leu Leu Gly Leu
 340 345 350
 Val Leu Leu Ser Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser
 355 360 365
 Asn Leu Ala Lys Lys Ser Pro Leu Glu Lys Ile Ser Leu Arg Gln Gln
 370 375 380
 Ile Ile Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala
 385 390 395 400
 Leu Ala Tyr Lys Gln Phe Thr Arg Glu Gly Leu Thr Val Glu Arg Glu
 405 410 415
 Asn Ala Ile Phe Ile Thr Ser Thr Ile Thr Ile Val Leu Phe Ser Thr
 420 425 430
 Val Val Phe Gly Leu Met Thr Lys Pro Leu Ile Asn Leu Leu Ile Pro
 435 440 445
 Ser Pro Lys Leu Asn Arg Ser Val Ser Ser Glu Pro Leu Thr Pro Asn
 450 455 460
 Ser Ile Thr Ile Pro Leu Leu Gly Glu Ser Gln Asp Ser Val Ala Glu
 465 470 475 480
 Leu Phe Ser Ile Arg Gly Gln Thr Ser Gln Gly Gly Glu Pro Val Ala
 485 490 495
 Arg Pro Ser Ser Leu Arg Met Leu Leu Thr Lys Pro Thr His Thr Val
 500 505 510
 His Tyr Tyr Trp Arg Lys Phe Asp Asn Ala Phe Met Arg Pro Val Phe
 515 520 525
 Gly Gly Arg Gly Phe Val Pro Tyr Val Pro Gly Ser Pro Thr Glu Arg
 530 535 540
 Ser Val Arg Asn Trp Glu Glu Glu Thr Lys Gln
 545 550 555

<210> 7
 <211> 542
 <212> PRT
 <213> Ipomoea tricolor

<400> 7
 Met Ala Phe Gly Leu Ser Ser Leu Leu Gln Asn Ser Glu Leu Phe Thr
 1 5 10 15
 Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala Leu Leu
 20 25 30
 Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg Trp Val

Arg Met Leu Leu Arg Thr Pro Thr His Thr Val His Arg Tyr Trp Arg
500 505 510
Lys Phe Asp Asp Ser Phe Met Arg Pro Val Phe Gly Gly Arg Gly Phe
515 520 525
Val Pro Phe Val Ala Gly Ser Pro Ala Glu Gln Ser Pro Arg
530 535 540

<210> 8

<211> 575

<212> PRT

<213> Arabidopsis thaliana

<400> 8

Met Ile Ser Pro Val Glu His Asp Pro Gln Gly Gln Val Lys Gln Gln
1 5 10 15
Gln Ala Ala Gly Val Gly Ile Leu Leu Gln Ile Met Met Leu Val Leu
20 25 30
Ser Phe Val Leu Gly His Val Leu Arg Arg His Arg Phe His Tyr Leu
35 40 45
Pro Glu Ala Ser Gly Ser Leu Leu Ile Gly Leu Ile Val Gly Ile Leu
50 55 60
Ala Asn Ile Ser Asp Thr Glu Thr Ser Ile Arg Phe Cys Pro Pro Pro
65 70 75 80
Ser Ile Pro Glu Phe Ser Leu Leu Ser Phe Pro Arg Ser Leu Val Cys
85 90 95
Ser Phe Tyr Ser Val Ser Gly Arg Gly Leu Ile Ser Thr Lys Ser Ser
100 105 110
Ser Ser Cys Phe Cys Cys Leu Pro Ser Tyr Tyr Ile Leu Cys Phe Asn
115 120 125
Ile Cys Ile Ser Ser Phe Lys Phe Ala Ala Ala Met Leu Cys Ile Met
130 135 140
Asp Val Ile Phe Leu Asp Ile Ile His Leu Phe Glu Pro Ser Gln Val
145 150 155 160
Ser Val Phe Asn Leu Asn His Ser Phe Leu Thr Leu Glu Pro Leu Leu
165 170 175
Pro Leu Leu Ser Ser Glu Leu Leu Ser Leu Gln Leu Leu Val Val
180 185 190
Cys Tyr Leu Gly Gly Ser Met Tyr Leu Met Tyr Lys Leu Pro Phe Val
195 200 205
Glu Cys Leu Met Phe Gly Ala Leu Ile Ser Ala Thr Asp Pro Val Thr
210 215 220
Val Leu Ser Ile Phe Gln Val Leu Leu Leu Phe Leu Leu Leu Ser Val
225 230 235 240
Ser Thr Gly Tyr Lys Tyr Ser His Asp Val Gly Thr Asp Val Asn Leu
245 250 255
Tyr Ala Leu Val Phe Gly Glu Ser Val Leu Asn Asp Ala Val Ser Phe
260 265 270
Tyr Tyr Leu Leu Arg Tyr Trp Ala Leu Pro Phe Lys Thr Met Ser Leu
275 280 285
Val Asn Arg Gln Ser Ser Ser Gly Glu His Phe Phe Met Val Val Ile
290 295 300
Arg Phe Phe Glu Thr Phe Ala Gly Ser Met Ser Ala Gly Leu Ala Ile
305 310 315 320
Ser Phe Leu Asn Ser Phe Tyr Thr Val Val Phe Thr Leu Leu Ile Leu
325 330 335
Ser Glu His Ile Val Asn Val Met Ser Leu Phe Ser Leu Phe Ser Thr

			340					345					350				
Ser	Ile	His	Ala	Cys	Arg	Arg	Cys	Trp	Ser	Leu	Arg	His	Cys	Phe	Tyr		
		355					360					365					
Thr	Leu	His	Arg	Asn	Cys	Asn	Arg	Arg	Val	Met	Lys	Arg	Tyr	Thr	Phe		
	370					375					380						
Ser	Asn	Leu	Ser	Glu	Ala	Ser	Gln	Ser	Phe	Val	Ser	Ser	Phe	Phe	His		
385				390					395						400		
Leu	Ile	Ser	Ser	Leu	Ala	Glu	Thr	Phe	Thr	Phe	Ile	Tyr	Met	Gly	Phe		
			405					410					415				
Asp	Ile	Ala	Met	Glu	Gln	His	Ser	Trp	Ser	His	Val	Gly	Ala	Val	Asn		
		420					425					430					
Val	Phe	Gly	Cys	Ala	Tyr	Leu	Val	Asn	Leu	Phe	Arg	Gln	Glu	Asn	Gln		
	435					440						445					
Lys	Ile	Pro	Met	Lys	His	Gln	Lys	Ala	Leu	Trp	Tyr	Ser	Gly	Leu	Arg		
450						455					460						
Gly	Ala	Met	Ala	Phe	Ala	Leu	Ala	Leu	Gln	Ser	Leu	His	Asp	Leu	Pro		
465					470				475					480			
Glu	Gly	His	Gly	Gln	Ile	Ile	Phe	Thr	Ala	Thr	Thr	Thr	Ile	Val	Val		
			485					490					495				
Val	Thr	Val	Thr	Phe	Val	Leu	Leu	Ile	Gly	Gly	Ser	Thr	Gly	Lys	Met		
	500						505					510					
Leu	Glu	Ala	Leu	Glu	Val	Val	Gly	Asp	Asp	Leu	Asp	Asp	Ser	Met	Ser		
	515					520					525						
Glu	Val	Asn	Ser	Arg	Arg	Ser	Thr	Leu	Ile	Ser	Leu	Asn	Ile	Gly	Ala		
530						535			540								
Ser	Ser	Asp	Glu	Asp	Thr	Ser	Ser	Ser	Gly	Ser	Arg	Phe	Lys	Met	Lys		
545				550					555					560			
Leu	Lys	Glu	Phe	His	Lys	Thr	Gly	Asp	Gly	Asp	Gly	Asp	Gly	Glu			
			565				570						575				

<210> 9

<211> 1146

<212> PRT

<213> Arabidopsis thaliana

<400> 9

Met	Thr	Thr	Val	Ile	Asp	Ala	Thr	Met	Ala	Tyr	Arg	Phe	Leu	Glu	Glu		
1			5					10					15				
Ala	Thr	Asp	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Lys	Leu	Glu	Ser	Ser		
	20						25				30						
Pro	Val	Asp	Ala	Val	Leu	Phe	Val	Gly	Met	Ser	Leu	Val	Leu	Gly	Ile		
	35					40					45						
Ala	Ser	Arg	His	Leu	Leu	Arg	Gly	Thr	Arg	Val	Pro	Tyr	Thr	Val	Ala		
50				55			60										
Leu	Leu	Val	Ile	Gly	Ile	Ala	Leu	Gly	Ser	Leu	Glu	Tyr	Gly	Ala	Lys		
65			70				75						80				
His	Asn	Leu	Gly	Lys	Ile	Gly	His	Gly	Ile	Arg	Ile	Trp	Asn	Glu	Ile		
	85					90					95						
Asp	Pro	Glu	Leu	Leu	Leu	Ala	Val	Phe	Leu	Pro	Ala	Leu	Leu	Phe	Glu		
	100					105					110						
Ser	Ser	Phe	Ser	Met	Glu	Val	His	Gln	Ile	Lys	Arg	Cys	Leu	Gly	Gln		
	115					120					125						
Met	Val	Leu	Leu	Ala	Val	Pro	Gly	Val	Leu	Ile	Ser	Thr	Ala	Cys	Leu		
130				135					140								
Gly	Ser	Leu	Val	Lys	Val	Thr	Phe	Pro	Tyr	Glu	Trp	Asp	Trp	Lys	Thr		
145				150					155					160			

Ser Leu Leu Leu Gly Gly Leu Leu Ser Ala Thr Asp Pro Val Ala Val
 165 170 175
 Val Ala Leu Leu Lys Glu Leu Gly Ala Ser Lys Lys Leu Ser Thr Ile
 180 185 190
 Ile Glu Gly Glu Ser Leu Met Asn Asp Gly Thr Ala Ile Val Val Phe
 195 200 205
 Gln Leu Phe Leu Lys Met Ala Met Gly Gln Asn Ser Asp Trp Ser Ser
 210 215 220
 Ile Ile Lys Phe Leu Leu Lys Val Ala Leu Gly Ala Val Gly Ile Gly
 225 230 235 240
 Leu Ala Phe Gly Ile Ala Ser Val Ile Trp Leu Lys Phe Ile Phe Asn
 245 250 255
 Asp Thr Val Ile Glu Ile Thr Leu Thr Ile Ala Val Ser Tyr Phe Ala
 260 265 270
 Tyr Tyr Thr Ala Gln Glu Trp Ala Gly Ala Ser Gly Val Leu Thr Val
 275 280 285
 Met Thr Leu Gly Met Phe Tyr Ala Ala Phe Ala Arg Thr Ala Phe Lys
 290 295 300
 Gly Asp Ser Gln Lys Ser Leu His His Phe Trp Glu Met Val Ala Tyr
 305 310 315 320
 Ile Ala Asn Thr Leu Ile Phe Ile Leu Ser Gly Val Val Ile Ala Glu
 325 330 335
 Gly Ile Leu Asp Ser Asp Lys Ile Ala Tyr Gln Gly Asn Ser Trp Arg
 340 345 350
 Phe Leu Phe Leu Leu Tyr Val Tyr Ile Gln Leu Ser Arg Val Val Val
 355 360 365
 Val Gly Val Leu Tyr Pro Leu Leu Cys Arg Phe Gly Tyr Gly Leu Asp
 370 375 380
 Trp Lys Glu Ser Ile Ile Leu Val Trp Ser Gly Leu Arg Gly Ala Val
 385 390 395 400
 Ala Leu Ala Leu Ser Leu Ser Val Lys Gln Ser Ser Gly Asn Ser His
 405 410 415
 Ile Ser Lys Glu Thr Gly Thr Leu Phe Leu Phe Phe Thr Gly Gly Ile
 420 425 430
 Val Phe Leu Thr Leu Ile Val Asn Gly Ser Thr Thr Gln Phe Val Leu
 435 440 445
 Arg Leu Leu Arg Met Asp Ile Leu Pro Ala Pro Lys Lys Arg Ile Leu
 450 455 460
 Glu Tyr Thr Lys Tyr Glu Met Leu Asn Lys Ala Leu Arg Ala Phe Gln
 465 470 475 480
 Asp Leu Gly Asp Asp Glu Glu Leu Gly Pro Ala Asp Trp Pro Thr Val
 485 490 495
 Glu Ser Tyr Ile Ser Ser Leu Lys Gly Ser Glu Gly Glu Leu Val His
 500 505 510
 His Pro His Asn Gly Ser Lys Ile Gly Ser Leu Asp Pro Lys Ser Leu
 515 520 525
 Lys Asp Ile Arg Met Arg Phe Leu Asn Gly Val Gln Ala Thr Tyr Trp
 530 535 540
 Glu Met Leu Asp Glu Gly Arg Ile Ser Glu Val Thr Ala Asn Ile Leu
 545 550 555 560
 Met Gln Ser Val Asp Glu Ala Leu Asp Gln Val Ser Thr Thr Leu Cys
 565 570 575
 Asp Trp Arg Gly Leu Lys Pro His Val Asn Phe Pro Asn Tyr Tyr Asn
 580 585 590
 Phe Leu His Ser Lys Val Val Pro Arg Lys Leu Val Thr Tyr Phe Ala
 595 600 605
 Val Glu Arg Leu Glu Ser Ala Cys Tyr Ile Ser Ala Ala Phe Leu Arg

610	Ala His Thr Ile	615	Ala Arg Gln Gln Leu Tyr	620	Asp Phe Leu Gly Glu Ser
625	Asn Ile Gly Ser	630	Ile Val Ile Asn Glu Ser	635	Glu Lys Glu Gly Glu Glu
	645		650		655
Ala Lys Lys Phe	Leu Glu Lys Val	Arg Ser Ser	Phe Pro Gln Val	Leu	
	660		665		670
Arg Val Val Lys	Thr Lys Gln Val	Thr Tyr Ser	Val Leu Asn His	Leu	
	675		680		685
Leu Gly Tyr Ile	Glu Asn Leu Glu	Lys Val Gly	Leu Leu Glu Glu	Lys	
	690		695		700
Glu Ile Ala His	Leu His Asp Ala	Val Gln Thr	Gly Leu Lys Lys	Leu	
705		710		715	720
Leu Arg Asn Pro	Pro Ile Val Lys	Leu Pro Lys	Leu Ser Asp Met	Ile	
	725		730		735
Thr Ser His Pro	Leu Ser Val Ala	Leu Pro Pro	Ala Phe Cys Glu	Pro	
	740		745		750
Leu Lys His Ser	Lys Lys Glu Pro	Met Lys Leu	Arg Gly Val Thr	Leu	
	755		760		765
Tyr Lys Glu Gly	Ser Lys Pro Thr	Gly Val Trp	Leu Ile Phe Asp	Gly	
	770		775		780
Ile Val Lys Trp	Lys Ser Lys Ile	Leu Ser Asn	Asn His Ser Leu	His	
785		790		795	800
Pro Thr Phe Ser	His Gly Ser Thr	Leu Gly Leu	Tyr Glu Val Leu	Thr	
	805		810		815
Gly Lys Pro Tyr	Leu Cys Asp Leu	Ile Thr Asp	Ser Met Val Leu	Cys	
	820		825		830
Phe Phe Ile Asp	Ser Glu Lys Ile	Leu Ser Leu	Gln Ser Asp Ser	Thr	
	835		840		845
Ile Asp Asp Phe	Leu Trp Gln Glu	Ser Ala Leu	Val Leu Leu Lys	Leu	
	850		855		860
Leu Arg Pro Gln	Ile Phe Glu Ser	Val Ala Met	Gln Glu Leu Arg	Ala	
865		870		875	880
Leu Val Ser Thr	Glu Ser Ser Lys	Leu Thr Thr	Tyr Val Thr Gly	Glu	
	885		890		895
Ser Ile Glu Ile	Asp Cys Asn Ser	Ile Gly Leu	Leu Leu Leu Glu	Gly Phe	
	900		905		910
Val Lys Pro Val	Gly Ile Lys Glu	Leu Ile Ser	Ser Ser Pro Ala	Ala	
	915		920		925
Leu Ser Pro Ser	Asn Gly Asn Gln	Ser Phe His	Asn Ser Ser Glu	Ala	
	930		935		940
Ser Gly Ile Met	Arg Val Ser Phe	Ser Gln Gln	Ala Thr Gln Tyr	Ile	
945		950		955	960
Val Glu Thr Arg	Ala Arg Ala Ile	Ile Phe Asn	Ile Gly Ala Phe	Gly	
	965		970		975
Ala Asp Arg Thr	Leu His Arg Arg	Pro Ser Ser	Leu Thr Pro Pro	Arg	
	980		985		990
Ser Ser Ser Ser	Asp Gln Leu Gln	Arg Ser Phe	Arg Lys Glu His	Arg	
	995		1000		1005
Gly Leu Met Ser	Trp Pro Glu Asn	Ile Tyr Ala	Lys Gln Gln Gln	Glu	
	1010		1015		1020
Ile Asn Lys Thr	Thr Leu Ser Leu	Ser Glu Arg	Ala Met Gln Leu	Ser	
1025		1030		1035	1040
Ile Phe Gly Ser	Met Val Asn Val	Tyr Arg Arg	Ser Val Ser Phe	Gly	
	1045		1050		1055
Gly Ile Tyr Asn	Asn Lys Leu Gln	Asp Asn Leu	Leu Tyr Lys Lys	Leu	
	1060		1065		1070

Pro Leu Asn Pro Ala Gln Gly Leu Val Ser Ala Lys Ser Glu Ser Ser
1075 1080 1085
Ile Val Thr Lys Lys Gln Leu Glu Thr Arg Lys His Ala Cys Gln Leu
1090 1095 1100
Pro Leu Lys Gly Glu Ser Ser Thr Arg Gln Asn Thr Met Val Glu Ser
1105 1110 1115 1120
Ser Asp Glu Glu Asp Glu Asp Glu Gly Ile Val Val Arg Ile Asp Ser
1125 1130 1135
Pro Ser Lys Ile Val Phe Arg Asn Asp Leu
1140 1145

<210> 10
<211> 555
<212> PRT
<213> Atriplex gmelini

<400> 10
Met Trp Ser Gln Leu Ser Ser Leu Leu Ser Gly Lys Met Asp Ala Leu
1 5 10 15
Thr Thr Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala
20 25 30
Leu Leu Cys Gly Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn Arg
35 40 45
Trp Met Asn Glu Ser Ile Thr Ala Leu Leu Ile Gly Leu Ala Thr Gly
50 55 60
Val Val Ile Leu Leu Ile Ser Gly Gly Lys Ser Ser His Leu Leu Val
65 70 75 80
Phe Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe
85 90 95
Asn Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile
100 105 110
Thr Ile Val Leu Phe Gly Ala Val Gly Thr Leu Val Ser Phe Thr Ile
115 120 125
Ile Ser Leu Gly Ala Leu Ser Ile Phe Lys Lys Leu Asp Ile Gly Thr
130 135 140
Leu Glu Leu Ala Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr
145 150 155 160
Asp Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu
165 170 175
Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser
180 185 190
Val Val Leu Phe Asn Ala Ile Gln Ser Phe Asp Leu Thr Arg Ile Asp
195 200 205
His Arg Ile Ala Leu Gln Phe Met Gly Asn Phe Leu Tyr Leu Phe Ile
210 215 220
Ala Ser Thr Ile Leu Gly Ala Phe Thr Gly Leu Leu Ser Ala Tyr Ile
225 230 235 240
Ile Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala
245 250 255
Leu Met Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe
260 265 270
Tyr Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser
275 280 285
His Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys
290 295 300
His Ala Phe Ala Thr Leu Ser Phe Val Ala Glu Val Phe Leu Phe Leu

305					310					315				320	
Tyr	Val	Gly	Met	Asp	Ala	Leu	Asp	Ile	Glu	Lys	Trp	Arg	Phe	Val	Ser
				325					330					335	
Asp	Ser	Pro	Gly	Ile	Ser	Val	Ala	Val	Ser	Ser	Ile	Leu	Leu	Gly	Leu
			340					345					350		
Val	Met	Val	Gly	Arg	Ala	Ala	Phe	Val	Phe	Pro	Leu	Ser	Trp	Leu	Met
		355					360					365			
Asn	Phe	Ala	Lys	Lys	Ser	Gln	Ser	Glu	Lys	Val	Thr	Phe	Asn	Gln	Gln
	370					375					380				
Ile	Val	Ile	Trp	Trp	Ala	Gly	Leu	Met	Arg	Gly	Ala	Val	Ser	Met	Ala
385					390					395					400
Leu	Ala	Tyr	Asn	Gln	Phe	Thr	Arg	Ser	Gly	His	Thr	Gln	Leu	Arg	Gly
			405						410				415		
Asn	Ala	Ile	Met	Ile	Thr	Ser	Thr	Ile	Ser	Val	Val	Leu	Phe	Ser	Thr
		420						425				430			
Met	Val	Phe	Gly	Leu	Leu	Thr	Lys	Pro	Leu	Ile	Met	Phe	Leu	Leu	Pro
	435						440					445			
Gln	Pro	Lys	His	Phe	Thr	Ser	Cys	Ser	Thr	Val	Ser	Asp	Val	Gly	Ser
	450					455					460				
Pro	Lys	Ser	Tyr	Ser	Leu	Pro	Leu	Leu	Glu	Gly	Asn	Gln	Asp	Tyr	Glu
465					470				475						480
Val	Asp	Val	Gly	Asn	Gly	Asn	His	Glu	Asp	Thr	Thr	Glu	Pro	Arg	Thr
			485					490						495	
Ile	Val	Arg	Pro	Ser	Ser	Leu	Arg	Met	Leu	Leu	Asn	Ala	Pro	Thr	His
		500						505					510		
Thr	Val	His	His	Tyr	Trp	Arg	Lys	Phe	Asp	Asp	Ser	Phe	Met	Arg	Pro
	515						520					525			
Val	Phe	Gly	Gly	Arg	Gly	Phe	Val	Pro	Phe	Val	Pro	Gly	Ser	Pro	Thr
	530					535					540				
Glu	Gln	Ser	Thr	Asn	Asn	Leu	Val	Asp	Arg	Thr					
545					550					555					

<210> 11

<211> 985

<212> PRT

<213> *Saccharomyces cerevisiae*

<400> 11

Met	Ala	Ile	Trp	Glu	Gln	Leu	Glu	Val	Ser	Lys	Ala	His	Val	Ala	Tyr
1				5					10					15	
Ala	Cys	Val	Gly	Val	Phe	Ser	Ser	Ile	Phe	Ser	Leu	Val	Ser	Leu	Tyr
			20					25					30		
Val	Lys	Glu	Lys	Leu	Tyr	Ile	Gly	Glu	Ser	Thr	Val	Ala	Gly	Ile	Phe
		35					40					45			
Gly	Leu	Ile	Val	Gly	Pro	Val	Cys	Leu	Asn	Trp	Phe	Asn	Pro	Leu	Lys
	50					55				60					
Trp	Gly	Asn	Ser	Asp	Ser	Ile	Thr	Leu	Glu	Ile	Thr	Arg	Ile	Val	Leu
65					70					75					80
Cys	Leu	Gln	Ile	Phe	Ala	Val	Ala	Val	Glu	Leu	Pro	Arg	Lys	Tyr	Met
			85						90				95		
Leu	Lys	His	Trp	Val	Ser	Val	Thr	Met	Leu	Leu	Leu	Pro	Val	Met	Thr
		100						105					110		
Ala	Gly	Trp	Leu	Ile	Ile	Gly	Leu	Phe	Val	Trp	Ile	Leu	Ile	Pro	Gly
	115						120					125			
Leu	Asn	Phe	Ser	Ala	Ser	Leu	Leu	Ile	Ser	Ala	Cys	Ile	Thr	Ala	Thr
	130					135					140				

Asp	Pro	Ile	Leu	Ala	Gln	Ser	Val	Val	Ser	Gly	Lys	Phe	Ala	Gln	Arg	145	150	155	160
Val	Pro	Gly	His	Leu	Arg	Asn	Leu	Leu	Ser	Ala	Glu	Ser	Gly	Cys	Asn	165	170	175	
Asp	Gly	Met	Ala	Phe	Pro	Phe	Leu	Phe	Leu	Ser	Met	Asn	Leu	Ile	Leu	180	185	190	
His	Pro	Gly	Asn	Gly	Arg	Glu	Ile	Val	Lys	Asp	Trp	Ile	Cys	Val	Thr	195	200	205	
Ile	Leu	Tyr	Glu	Cys	Leu	Phe	Gly	Cys	Leu	Leu	Gly	Cys	Phe	Ile	Gly	210	215	220	
Tyr	Val	Gly	Arg	Ile	Thr	Ile	Arg	Phe	Ala	Glu	Lys	Lys	Asn	Ile	Ile	225	230	235	240
Asp	Arg	Glu	Ser	Phe	Leu	Ala	Phe	Tyr	Val	Val	Leu	Ala	Phe	Met	Cys	245	250	255	
Ala	Gly	Phe	Gly	Ser	Ile	Leu	Gly	Val	Asp	Asp	Leu	Leu	Val	Ser	Phe	260	265	270	
Ala	Ala	Gly	Ala	Thr	Phe	Ala	Trp	Asp	Gly	Trp	Phe	Ser	Gln	Lys	Thr	275	280	285	
Gln	Glu	Ser	Asn	Val	Ser	Thr	Val	Ile	Asp	Leu	Leu	Leu	Asn	Tyr	Ala	290	295	300	
Tyr	Phe	Ile	Tyr	Phe	Gly	Ala	Ile	Ile	Pro	Trp	Ser	Gln	Phe	Asn	Asn	305	310	315	320
Gly	Glu	Ile	Gly	Thr	Asn	Val	Trp	Arg	Leu	Ile	Ile	Leu	Ser	Ile	Val	325	330	335	
Val	Ile	Phe	Leu	Arg	Arg	Ile	Pro	Ala	Val	Met	Ile	Leu	Arg	Pro	Leu	340	345	350	
Ile	Pro	Asp	Ile	Lys	Ser	Trp	Arg	Glu	Ala	Leu	Phe	Val	Gly	His	Phe	355	360	365	
Gly	Pro	Ile	Gly	Val	Gly	Ala	Ile	Phe	Ala	Ala	Ile	Leu	Ala	Arg	Gly	370	375	380	
Glu	Leu	Glu	Ser	Thr	Phe	Ser	Asp	Glu	Pro	Thr	Pro	Leu	Asn	Val	Val	385	390	395	400
Pro	Ser	Lys	Glu	Glu	Ser	Lys	His	Trp	Gln	Leu	Ile	Ala	Cys	Ile	Trp	405	410	415	
Pro	Ile	Thr	Cys	Phe	Phe	Ile	Val	Thr	Ser	Ile	Ile	Val	His	Gly	Ser	420	425	430	
Ser	Val	Ala	Ile	Ile	Thr	Leu	Gly	Arg	His	Leu	Asn	Thr	Ile	Thr	Leu	435	440	445	
Thr	Lys	Thr	Phe	Thr	Thr	His	Thr	Thr	Asn	Gly	Asp	Asn	Gly	Lys	Ser	450	455	460	
Ser	Trp	Met	Gln	Arg	Leu	Pro	Ser	Leu	Asp	Lys	Ala	Gly	Arg	Ser	Phe	465	470	475	480
Ser	Leu	His	Arg	Met	Asp	Thr	Gln	Met	Thr	Leu	Ser	Gly	Asp	Glu	Gly	485	490	495	
Glu	Ala	Glu	Glu	Gly	Gly	Gly	Arg	Lys	Gly	Leu	Ala	Gly	Gly	Glu	Asp	500	505	510	
Glu	Glu	Gly	Leu	Asn	Asn	Asp	Gln	Ile	Gly	Ser	Val	Ala	Thr	Ser	Gly	515	520	525	
Ile	Pro	Ala	Arg	Pro	Ala	Gly	Gly	Met	Pro	Arg	Arg	Arg	Lys	Leu	Ser	530	535	540	
Arg	Lys	Glu	Lys	Arg	Leu	Asn	Arg	Arg	Gln	Lys	Leu	Arg	Asn	Lys	Gly	545	550	555	560
Arg	Glu	Ile	Phe	Ser	Ser	Arg	Ser	Lys	Asn	Glu	Met	Tyr	Asp	Asp	Asp	565	570	575	
Glu	Leu	Asn	Asp	Leu	Gly	Arg	Glu	Arg	Leu	Gln	Lys	Glu	Lys	Glu	Ala	580	585	590	
Arg	Ala	Ala	Thr	Phe	Ala	Leu	Ser	Thr	Ala	Val	Asn	Thr	Gln	Arg	Asn				

595					600					605					
Glu	Glu	Ile	Gly	Met	Gly	Gly	Asp	Glu	Glu	Glu	Asp	Glu	Tyr	Thr	Pro
610					615					620					
Glu	Lys	Glu	Tyr	Ser	Asp	Asn	Tyr	Asn	Asn	Thr	Pro	Ser	Phe	Glu	Ser
625					630					635					
Ser	Glu	Arg	Ser	Ser	Ser	Leu	Arg	Gly	Arg	Thr	Tyr	Val	Pro	Arg	Asn
645					650					655					
Arg	Tyr	Asp	Gly	Glu	Glu	Thr	Glu	Ser	Glu	Ile	Glu	Ser	Glu	Asp	Glu
660					665					670					
Met	Glu	Asn	Glu	Ser	Glu	Arg	Ser	Met	Ala	Ser	Ser	Glu	Glu	Arg	Arg
675					680					685					
Ile	Arg	Lys	Met	Lys	Glu	Glu	Glu	Met	Lys	Pro	Gly	Thr	Ala	Tyr	Leu
690					695					700					
Asp	Gly	Asn	Arg	Met	Ile	Ile	Glu	Asn	Lys	Gln	Gly	Glu	Ile	Leu	Asn
705					710					715					
Gln	Val	Asp	Ile	Glu	Asp	Arg	Asn	Glu	Ala	Arg	Asp	Asp	Glu	Val	Ser
725					730					735					
Val	Asp	Ser	Thr	Ala	His	Ser	Ser	Leu	Thr	Thr	Thr	Met	Thr	Asn	Leu
740					745					750					
Ser	Ser	Ser	Ser	Gly	Gly	Arg	Leu	Lys	Arg	Ile	Leu	Thr	Pro	Thr	Ser
755					760					765					
Leu	Gly	Lys	Ile	His	Ser	Leu	Val	Asp	Lys	Gly	Lys	Asp	Lys	Asn	Lys
770					775					780					
Asn	Ser	Lys	Tyr	His	Ala	Phe	Lys	Ile	Asp	Asn	Leu	Leu	Ile	Ile	Glu
785					790					795					
Asn	Glu	Asp	Gly	Asp	Val	Ile	Lys	Arg	Tyr	Lys	Ile	Asn	Pro	His	Lys
805					810					815					
Ser	Asp	Asp	Asp	Lys	Ser	Lys	Asn	Arg	Pro	Arg	Asn	Asp	Ser	Val	Val
820					825					830					
Ser	Arg	Ala	Leu	Thr	Ala	Val	Gly	Leu	Lys	Ser	Lys	Ala	Asn	Ser	Gly
835					840					845					
Val	Pro	Pro	Pro	Val	Asp	Glu	Glu	Lys	Ala	Ile	Glu	Gly	Pro	Ser	Arg
850					855					860					
Lys	Gly	Pro	Gly	Met	Leu	Lys	Lys	Arg	Thr	Leu	Thr	Pro	Ala	Pro	Pro
865					870					875					
Arg	Gly	Val	Gln	Asp	Ser	Leu	Asp	Leu	Glu	Asp	Glu	Pro	Ser	Ser	Glu
885					890					895					
Glu	Asp	Leu	Gly	Asp	Ser	Tyr	Asn	Met	Asp	Asp	Ser	Glu	Asp	Tyr	Asp
900					905					910					
Asp	Asn	Ala	Tyr	Glu	Ser	Glu	Thr	Glu	Phe	Glu	Arg	Gln	Arg	Arg	Leu
915					920					925					
Asn	Ala	Leu	Gly	Glu	Met	Thr	Ala	Pro	Ala	Asp	Gln	Asp	Asp	Glu	Glu
930					935					940					
Leu	Pro	Pro	Leu	Pro	Val	Glu	Ala	Gln	Thr	Gly	Asn	Asp	Gly	Pro	Gly
945					950					955					
Thr	Ala	Glu	Gly	Lys	Lys	Lys	Gln	Lys	Ser	Ala	Ala	Val	Lys	Ser	Ala
965					970					975					
Leu	Ser	Lys	Thr	Leu	Gly	Leu	Asn	Lys							
980					985										

<210> 12
 <211> 633
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 12

Met	Leu	Ser	Lys	Val	Leu	Leu	Asn	Ile	Ala	Phe	Lys	Val	Leu	Leu	Thr
1				5					10					15	
Thr	Ala	Lys	Arg	Ala	Val	Asp	Pro	Asp	Asp	Asp	Asp	Glu	Leu	Leu	Pro
			20					25					30		
Ser	Pro	Asp	Leu	Pro	Gly	Ser	Asp	Asp	Pro	Ile	Ala	Gly	Asp	Pro	Asp
		35					40					45			
Val	Asp	Leu	Asn	Pro	Val	Thr	Glu	Glu	Met	Phe	Ser	Ser	Trp	Ala	Leu
	50					55					60				
Phe	Ile	Met	Leu	Leu	Leu	Ile	Ser	Ala	Leu	Trp	Ser	Ser	Tyr	Tyr	
65					70				75					80	
Leu	Thr	Gln	Lys	Arg	Ile	Arg	Ala	Val	His	Glu	Thr	Val	Leu	Ser	Ile
			85						90					95	
Phe	Tyr	Gly	Met	Val	Ile	Gly	Leu	Ile	Ile	Arg	Met	Ser	Pro	Gly	His
			100					105					110		
Tyr	Ile	Gln	Asp	Thr	Val	Thr	Phe	Asn	Ser	Ser	Tyr	Phe	Phe	Asn	Val
	115						120					125			
Leu	Leu	Pro	Pro	Ile	Ile	Leu	Asn	Ser	Gly	Tyr	Glu	Leu	Asn	Gln	Val
	130					135					140				
Asn	Phe	Phe	Asn	Asn	Met	Leu	Ser	Ile	Leu	Ile	Phe	Ala	Ile	Pro	Gly
145					150					155				160	
Thr	Phe	Ile	Ser	Ala	Val	Val	Ile	Gly	Ile	Ile	Leu	Tyr	Ile	Trp	Thr
			165						170					175	
Phe	Leu	Gly	Leu	Glu	Ser	Ile	Asp	Ile	Ser	Phe	Ala	Asp	Ala	Met	Ser
		180						185				190			
Val	Gly	Ala	Thr	Leu	Ser	Ala	Thr	Asp	Pro	Val	Thr	Ile	Leu	Ser	Ile
	195						200					205			
Phe	Asn	Ala	Tyr	Lys	Val	Asp	Pro	Lys	Leu	Tyr	Thr	Ile	Ile	Phe	Gly
	210					215					220				
Glu	Ser	Leu	Leu	Asn	Asp	Ala	Ile	Ser	Ile	Val	Met	Phe	Glu	Thr	Cys
225				230						235				240	
Gln	Lys	Phe	His	Gly	Gln	Pro	Ala	Thr	Phe	Ser	Ser	Val	Phe	Glu	Gly
			245						250				255		
Ala	Gly	Leu	Phe	Leu	Met	Thr	Phe	Ser	Val	Ser	Leu	Leu	Ile	Gly	Val
		260					265						270		
Leu	Ile	Gly	Ile	Leu	Val	Ala	Leu	Leu	Leu	Lys	His	Thr	His	Ile	Arg
	275						280					285			
Arg	Tyr	Pro	Gln	Ile	Glu	Ser	Cys	Leu	Ile	Leu	Leu	Ile	Ala	Tyr	Glu
	290					295					300				
Ser	Tyr	Phe	Phe	Ser	Asn	Gly	Cys	His	Met	Ser	Gly	Ile	Val	Ser	Leu
305					310					315				320	
Leu	Phe	Cys	Gly	Ile	Thr	Leu	Lys	His	Tyr	Ala	Tyr	Tyr	Asn	Met	Ser
			325						330				335		
Arg	Arg	Ser	Gln	Ile	Thr	Ile	Lys	Tyr	Ile	Phe	Gln	Leu	Leu	Ala	Arg
			340					345				350			
Leu	Ser	Glu	Asn	Phe	Ile	Phe	Ile	Tyr	Leu	Gly	Leu	Glu	Leu	Phe	Thr
	355					360					365				
Glu	Val	Glu	Leu	Val	Tyr	Lys	Pro	Leu	Leu	Ile	Ile	Val	Ala	Ala	Ile
	370					375					380				
Ser	Ile	Cys	Val	Ala	Arg	Trp	Cys	Ala	Val	Phe	Pro	Leu	Ser	Gln	Phe
385					390					395				400	
Val	Asn	Trp	Ile	Tyr	Arg	Val	Lys	Thr	Ile	Arg	Ser	Met	Ser	Gly	Ile
			405						410				415		
Thr	Gly	Glu	Asn	Ile	Ser	Val	Pro	Asp	Glu	Ile	Pro	Tyr	Asn	Tyr	Gln
			420					425				430			
Met	Met	Thr	Phe	Trp	Ala	Gly	Leu	Arg	Gly	Ala	Val	Gly	Val	Ala	Leu
	435						440					445			
Ala	Leu	Gly	Ile	Gln	Gly	Glu	Tyr	Lys	Phe	Thr	Leu	Leu	Ala	Thr	Val

450	455	460
Leu Val Val Val Val	Leu Thr Val Ile Ile	Phe Gly Gly Thr Thr Ala
465	470	475
Gly Met Leu Glu Val	Leu Asn Ile Lys Thr	Gly Cys Ile Ser Glu Glu
485	490	495
Asp Thr Ser Asp Asp	Glu Phe Asp Ile Glu	Ala Pro Arg Ala Ile Asn
500	505	510
Leu Leu Asn Gly Ser Ser	Ile Gln Thr Asp Leu	Gly Pro Tyr Ser Asp
515	520	525
Asn Asn Ser Pro Asp	Ile Ser Ile Asp Gln	Phe Ala Val Ser Ser Asn
530	535	540
Lys Asn Leu Pro Asn	Asn Ile Ser Thr Thr	Gly Gly Asn Thr Phe Gly
545	550	555
Gly Leu Asn Glu Thr	Glu Asn Thr Ser Pro	Asn Pro Ala Arg Ser Ser
565	570	575
Met Asp Lys Arg Asn	Leu Arg Asp Lys Leu	Gly Thr Ile Phe Asn Ser
580	585	590
Asp Ser Gln Trp Phe	Gln Asn Phe Asp Glu	Gln Val Leu Lys Pro Val
595	600	605
Phe Leu Asp Asn Val	Ser Pro Ser Leu Gln	Asp Ser Ala Thr Gln Ser
610	615	620
Pro Ala Asp Phe Ser	Ser Ser Gln Asn His	
625	630	

<210> 13

<211> 546

<212> PRT

<213> Arabidopsis thaliana

<400> 13

Met Thr Met Phe Ala Ser Leu Thr Ser Lys Met Leu Ser Val Ser Thr
1 5 10 15
Ser Asp His Ala Ser Val Val Ser Leu Asn Leu Phe Val Ala Leu Leu
20 25 30
Cys Ala Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn Arg Trp Met
35 40 45
Asn Glu Ser Ile Thr Ala Leu Leu Ile Gly Leu Gly Thr Gly Val Val
50 55 60
Ile Leu Leu Ile Ser Arg Gly Lys Asn Ser His Leu Leu Val Phe Ser
65 70 75 80
Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala
85 90 95
Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Val Thr Ile
100 105 110
Met Ala Phe Gly Ala Ile Gly Thr Val Val Ser Cys Thr Ile Ile Ser
115 120 125
Leu Gly Ala Ile Gln Phe Phe Lys Lys Leu Asp Ile Gly Thr Phe Asp
130 135 140
Leu Gly Asp Phe Leu Ala Ile Gly Ala Ile Phe Ala Ala Thr Asp Ser
145 150 155 160
Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu Leu Tyr
165 170 175
Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val
180 185 190
Leu Phe Asn Ala Ile Gln Ser Phe Asp Leu Thr His Leu Asn His Glu
195 200 205

Ala Ala Phe Gln Phe Leu Gly Asn Phe Phe Tyr Leu Phe Leu Leu Ser
 210 215 220
 Thr Gly Leu Gly Val Ala Thr Gly Leu Ile Ser Ala Tyr Val Ile Lys
 225 230 235 240
 Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu Met
 245 250 255
 Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Ala Leu
 260 265 270
 Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His Tyr
 275 280 285
 Thr Trp His Asn Val Thr Glu Ser Ser Arg Ile Thr Thr Lys His Ala
 290 295 300
 Phe Ala Thr Leu Ser Phe Leu Ala Glu Thr Phe Ile Phe Leu Tyr Val
 305 310 315 320
 Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Arg Phe Val Ser Asp Ser
 325 330 335
 Pro Gly Thr Ser Val Ala Val Ser Ser Ile Leu Met Gly Leu Val Met
 340 345 350
 Leu Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn Leu
 355 360 365
 Ala Lys Lys His Gln Ser Glu Lys Ile Ser Ile Lys Gln Gln Val Val
 370 375 380
 Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala Leu Ala
 385 390 395 400
 Tyr Asn Lys Phe Thr Arg Ser Gly His Thr Glu Leu Arg Gly Asn Ala
 405 410 415
 Ile Met Ile Thr Ser Thr Ile Thr Val Cys Leu Phe Ser Thr Met Val
 420 425 430
 Phe Gly Met Leu Thr Lys Pro Leu Ile Arg Tyr Leu Met Pro His Gln
 435 440 445
 Lys Ala Thr Thr Ser Thr Thr Ser Met Leu Ser Asp Asp Ser Thr Pro
 450 455 460
 Lys Ser Ile His Ile Pro Leu Leu Asp Gly Glu Gln Leu Asp Ser Phe
 465 470 475 480
 Glu Leu Pro Gly Ser His Gln Asp Val Pro Arg Pro Asn Ser Leu Arg
 485 490 495
 Gly Phe Leu Met Arg Pro Thr Arg Thr Val His Tyr Tyr Trp Arg Gln
 500 505 510
 Phe Asp Asp Ala Phe Met Arg Pro Val Phe Gly Gly Arg Gly Phe Val
 515 520 525
 Pro Phe Val Pro Gly Ser Pro Thr Glu Arg Ser Ser His Asp Leu Ser
 530 535 540
 Lys Pro
 545

<210> 14
 <211> 529
 <212> PRT
 <213> Arabidopsis thaliana

<400> 14
 Met Ser Ile Gly Leu Thr Glu Phe Val Thr Asn Lys Leu Ala Ala Glu
 1 5 10 15
 His Pro Gln Val Ile Pro Ile Ser Val Phe Ile Ala Ile Leu Cys Leu
 20 25 30
 Cys Leu Val Ile Gly His Leu Leu Glu Glu Asn Arg Trp Val Asn Glu

Gln Pro Val Tyr Thr Ile His Arg Tyr Trp Arg Lys Phe Asp Asp Thr
500 505 510
Tyr Met Arg Pro Ile Phe Gly Gly Pro Arg Arg Glu Asn Gln Pro Glu
515 520 525
Cys

<210> 15
<211> 552
<212> PRT
<213> Arabidopsis thaliana

<400> 15
Met Val Ile Gly Leu Ser Thr Met Leu Glu Lys Thr Glu Ala Leu Phe
1 5 10 15
Ala Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala Leu
20 25 30
Leu Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Thr Arg Trp
35 40 45
Met Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Ser Cys Thr Gly Ile
50 55 60
Val Ile Leu Leu Ile Ser Gly Gly Lys Ser Ser Arg Ile Leu Val Phe
65 70 75 80
Ser Glu Asp Leu Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn
85 90 95
Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Met Thr
100 105 110
Ile Met Leu Phe Gly Ala Ile Gly Thr Leu Ile Ser Phe Val Ile Ile
115 120 125
Ser Phe Gly Ala Lys His Leu Phe Glu Lys Met Asn Ile Gly Asp Leu
130 135 140
Thr Ile Ala Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp
145 150 155 160
Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Leu Leu
165 170 175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
180 185 190
Val Leu Phe Asn Ala Ile Gln Arg Phe Asp Leu Thr Asn Ile Asn Ser
195 200 205
Ala Ile Ala Leu Glu Phe Ala Gly Asn Phe Phe Tyr Leu Phe Ile Leu
210 215 220
Ser Thr Ala Leu Gly Val Ala Ala Gly Leu Leu Ser Ala Phe Val Ile
225 230 235 240
Lys Lys Leu Tyr Ile Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu
245 250 255
Met Met Leu Leu Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe His
260 265 270
Leu Ser Ser Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His
275 280 285
Tyr Thr Trp His Asn Val Thr Asp Lys Ser Lys Val Thr Thr Lys His
290 295 300
Thr Phe Ala Ala Met Ser Phe Leu Ala Glu Ile Phe Ile Phe Leu Tyr
305 310 315 320
Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Asp Val Val Arg Asn
325 330 335
Ser Pro Gly Gln Ser Ile Gly Val Ser Ser Ile Leu Leu Gly Leu Ile

Leu Asn Asp Ala Val Ser Phe Tyr Tyr Leu Leu Arg Tyr Trp Ala Leu
 180 185 190
 Pro Phe Lys Phe Phe Glu Thr Phe Ala Gly Ser Met Ser Ala Glu His
 195 200 205
 Leu Phe Lys Tyr Ala Gly Leu Asp Thr Glu Asn Leu Gln Asn Leu Glu
 210 215 220
 Cys Cys Leu Phe Val Leu Phe Pro Tyr Phe Ser Tyr Met Leu Ala Glu
 225 230 235 240
 Gly Val Gly Leu Ser Gly Ile Val Ser Ile Leu Phe Thr Gly Ile Val
 245 250 255
 Met Lys Arg Tyr Thr Phe Ser Asn Leu Ser Glu Ala Ser Gln Ser Phe
 260 265 270
 Val Ser Ser Phe Phe His Leu Ile Ser Ser Leu Ala Glu Thr Phe Thr
 275 280 285
 Phe Ile Tyr Met Gly Phe Asp Ile Ala Met Glu Gln His Ser Trp Ser
 290 295 300
 His Val Gly Phe Ile Leu Phe Ser Ile Val Ser Ser Phe Thr Asp Arg
 305 310 315 320
 Gln Ala Val Asn Val Phe Gly Cys Ala Tyr Leu Val Asn Leu Phe Arg
 325 330 335
 Gln Glu Asn Gln Lys Ile Pro Met Lys His Gln Lys Ala Leu Trp Tyr
 340 345 350
 Ser Gly Leu Arg Gly Ala Met Ala Phe Ala Leu Ala Leu Gln Ser Leu
 355 360 365
 His Asp Leu Pro Glu Gly His Gly Gln Ile Ile Phe Thr Ala Thr Thr
 370 375 380
 Thr Ile Val Val Val Thr Val Leu Leu Ile Gly Gly Ser Thr Gly Lys
 385 390 395 400
 Met Leu Glu Ala Leu Glu Val Val Gly Asp Asp Leu Asp Asp Ser Met
 405 410 415
 Ser Glu Gly Phe Glu Glu Ser Asp His Gln Tyr Val Pro Pro Pro Phe
 420 425 430
 Ser Ile Gly Ala Ser Ser Asp Glu Asp Thr Ser Ser Ser Gly Ser Arg
 435 440 445
 Phe Lys Met Lys Leu Lys Glu Phe His Lys Thr Thr Thr Ser Phe Thr
 450 455 460
 Ala Leu Asp Lys Asn Phe Leu Thr Pro Phe Phe Thr Thr Asn Ser Gly
 465 470 475 480
 Asp Gly Asp Gly Asp Gly Glu
 485

<210> 17

<211> 531

<212> PRT

<213> Arabidopsis thaliana

<400> 17

Met Ser Ser Glu Leu Gln Ile Ser Pro Ala Ile His Asp Pro Gln Gly
 1 5 10 15
 Gln Glu Lys Gln Gln Gln Ala Ala Gly Val Gly Ile Leu Leu Gln Ile
 20 25 30
 Met Met Leu Val Leu Ser Phe Val Leu Gly His Val Leu Arg Arg His
 35 40 45
 Lys Phe Tyr Tyr Leu Pro Glu Ala Ser Ala Ser Leu Leu Ile Gly Leu
 50 55 60
 Ile Val Gly Gly Leu Ala Asn Ile Ser Asn Thr Glu Thr Ser Ile Arg

65					70					75				80	
Phe	Val	Glu	Leu	Phe	Leu	Ile	Ser	Phe	Phe	Arg	His	Gly	Ser	Ile	Ser
				85					90					95	
Thr	Met	Ser	Ser	Ser	Phe	Cys	Phe	Cys	Cys	Leu	Pro	Ser	Tyr	Tyr	Ile
			100					105					110		
Leu	Lys	Ile	Glu	Tyr	Leu	Gly	Gly	Val	Met	Phe	Leu	Met	Tyr	Arg	Leu
		115				120						125			
Pro	Phe	Val	Glu	Cys	Leu	Met	Phe	Gly	Ser	Leu	Ile	Ser	Ala	Thr	Asp
	130					135					140				
Pro	Val	Thr	Val	Leu	Ser	Ile	Phe	Gln	Glu	Leu	Gly	Ser	Asp	Val	Asn
145					150					155					160
Leu	Tyr	Ala	Leu	Val	Phe	Gly	Glu	Ser	Val	Leu	Asn	Asp	Ala	Asp	Glu
			165						170					175	
Ile	Val	Thr	Leu	Leu	Ile	Arg	Ser	Phe	Ser	Phe	Leu	Cys	Cys	Phe	Trp
		180						185					190		
Gln	Met	Ala	Ile	Ser	Leu	Tyr	Arg	Thr	Met	Ser	Leu	Val	Arg	Ser	His
		195					200					205			
Ser	Ser	Gly	Gln	Asn	Phe	Phe	Met	Val	Ile	Val	Arg	Phe	Leu	Glu	Thr
	210					215					220				
Phe	Val	Gly	Ser	Met	Ser	Ala	Ala	Met	Lys	Tyr	Phe	Ile	Leu	Met	Tyr
225				230						235					240
Ser	Leu	Leu	Leu	Ser	Val	Tyr	Arg	Thr	Trp	Ser	Ala	Val	Ser	Ser	Tyr
			245						250					255	
Phe	Phe	His	Ile	Ser	Arg	Asn	Lys	Thr	Leu	Leu	Phe	Tyr	Thr	Ser	Tyr
		260						265					270		
Val	Ser	Ile	Tyr	Phe	Thr	Leu	Ile	Glu	Ile	Val	Gln	Phe	Val	Met	Lys
		275					280					285			
His	Tyr	Thr	Tyr	Ser	Asn	Leu	Ser	Ala	Asn	Ser	Gln	Arg	Phe	Val	Ser
	290					295					300				
Ala	Phe	Phe	His	Leu	Ile	Ser	Ser	Leu	Ala	Glu	Thr	Phe	Val	Phe	Ile
305				310						315					320
Tyr	Met	Gly	Phe	Asp	Ile	Ala	Met	Glu	Lys	His	Ser	Trp	Ala	Ala	Asn
			325						330					335	
Val	Phe	Gly	Cys	Gly	Tyr	Leu	Val	Asn	Leu	Ala	Arg	Pro	Ala	His	Arg
		340						345					350		
Lys	Ile	Pro	Met	Thr	His	Gln	Lys	Ala	Leu	Trp	Tyr	Ser	Gly	Lys	Ile
	355					360						365			
Leu	Leu	Cys	Val	Pro	Leu	Ser	Ser	Tyr	Cys	Phe	Tyr	Ser	Ser	Val	Ile
	370					375					380				
Asn	Thr	Lys	Ile	Cys	Gly	Phe	Cys	Ile	Gly	Leu	Arg	Gly	Ala	Met	Ala
385				390						395					400
Phe	Ala	Leu	Ala	Leu	Gln	Ser	Val	His	Asp	Leu	Pro	Glu	Gly	His	Gly
			405						410					415	
Gln	Thr	Ile	Phe	Thr	Ala	Thr	Thr	Ala	Ile	Val	Val	Leu	Thr	Val	Leu
		420						425					430		
Leu	Ile	Gly	Gly	Ser	Thr	Gly	Thr	Met	Leu	Glu	Ala	Leu	Glu	Val	Val
	435						440					445			
Gly	Asp	Ser	His	Asp	Thr	Ser	Leu	Gly	Asp	Gly	Phe	Glu	Val	Val	Asn
	450					455					460				
Ser	Arg	Tyr	Met	Thr	Ser	Tyr	Asp	Asp	Glu	Asp	Thr	Pro	Pro	Gly	Ser
465				470						475					480
Gly	Phe	Arg	Thr	Lys	Leu	Arg	Glu	Phe	His	Lys	Ser	Ala	Ala	Ser	Phe
			485						490					495	
Thr	Glu	Leu	Asp	Arg	Asn	Tyr	Leu	Thr	Pro	Phe	Phe	Thr	Ser	Asn	Asn
		500						505					510		
Gly	Asp	Tyr	Asp	Asp	Glu	Gly	Asn	Met	Glu	Gln	His	His	Gly	Asn	Asn
	515						520					525			

Ile Ile Leu
530

<210> 18
<211> 697
<212> PRT
<213> Arabidopsis thaliana

<400> 18
Met Thr Ser Ile Ile Gly Ala Ala Leu Pro Tyr Lys Ser Pro Glu Lys
1 5 10 15
Ala Ile Ala Ser Ser Ser Tyr Ser Ala Glu Asn Asp Ser Ser Pro Val
20 25 30
Asp Ala Val Ile Phe Ala Gly Thr Ser Leu Val Leu Gly Thr Ala Cys
35 40 45
Arg Tyr Leu Phe Asn Gly Thr Arg Val Pro Tyr Thr Val Val Leu Leu
50 55 60
Val Ile Gly Ile Phe Leu Gly Ser Leu Glu Tyr Gly Thr Lys His Asn
65 70 75 80
Leu Gly Lys Leu Gly His Gly Ile Arg Ile Trp Asn Gly Ile Asn Pro
85 90 95
Asp Leu Leu Leu Ala Val Phe Leu Pro Val Leu Leu Phe Glu Ser Ser
100 105 110
Phe Ser Met Asp Val His Gln Ile Lys Arg Cys Met Gly Gln Met Val
115 120 125
Leu Leu Ala Gly Pro Gly Val Leu Ile Ser Thr Phe Cys Leu Gly Ala
130 135 140
Leu Ile Lys Leu Thr Phe Pro Tyr Asn Trp Asp Trp Lys Thr Ser Leu
145 150 155 160
Leu Leu Gly Gly Leu Leu Gly Ala Thr Asp Pro Val Ala Val Val Ala
165 170 175
Leu Leu Lys Glu Leu Gly Ala Ser Lys Lys Met Thr Thr Leu Ile Asp
180 185 190
Gly Glu Ser Leu Met Asn Asp Gly Val Ser Val Val Val Phe Gln Leu
195 200 205
Phe Phe Lys Met Val Met Gly His Asn Ser Asp Trp Gly Ser Ile Ile
210 215 220
Lys Phe Leu Val Gln Asn Ser Phe Gly Ala Val Gly Ile Gly Leu Ala
225 230 235 240
Phe Gly Ile Ala Ser Val Phe Trp Leu Lys Phe Ile Phe Asn Asp Thr
245 250 255
Val Ala Gln Ile Thr Val Thr Leu Ser Ala Ser Tyr Phe Ala Tyr Tyr
260 265 270
Thr Ala Gln Glu Trp Ala Gly Val Ser Gly Ile Leu Thr Val Met Ile
275 280 285
Leu Gly Met Phe Phe Ala Ala Phe Ala Arg Thr Ala Phe Lys Gly Asp
290 295 300
Ser His Gln Ser Leu His His Phe Trp Tyr Phe Thr Thr Gln Glu Met
305 310 315 320
Ala Ala Tyr Ile Ala Asn Thr Leu Val Phe Met Leu Ser Gly Val Ile
325 330 335
Ile Ala Glu Ser Val Leu Ser Gly Gln Thr Ile Ser Tyr Lys Ala Ile
340 345 350
Lys Trp Lys Phe Ile Ser Gln Phe Arg Tyr Gly Asn Lys Ala Val Leu
355 360 365
Gln Phe Leu Phe Leu Thr Gly Gly Ile Val Phe Leu Thr Leu Val Val

370	375	380
Asn Gly Ser Thr Thr Gln Leu Leu Leu His Leu Leu Arg Met Asp Thr		
385	390	395
Leu Thr Ala Thr Lys Lys Arg Ile Leu Glu Tyr Thr Lys Phe Glu Met		400
	405	410
Met Lys Thr Ala Leu Lys Ala Phe Glu Asn Leu Gly Asp Asp Glu Glu		415
	420	425
Leu Gly Ser Ala Asp Trp Pro Thr Val Ile Arg His Ile Ser Ser Leu		430
	435	440
Lys Asp Leu Glu Gly Arg Gln Val Asn Pro His Asp Gly Tyr Glu Ala		445
	450	455
Gly Ser Leu Asp Pro Thr Asn Ile Met Asp Ile Arg Val Gln Ala Ala		460
465	470	475
Tyr Trp Glu Met Leu Asp Asp Gly Arg Ile Thr Gln Cys Thr Ala Asn		480
	485	490
Val Leu Met Gln Ser Val Asp Glu Ala Leu Asp Leu Val Ser Thr Ser		495
	500	505
Ser Leu Ser Asp Trp Arg Gly Leu Glu Pro Arg Val His Phe Pro Asn		510
	515	520
Tyr Tyr Lys Phe Leu Gln Ser Lys Ile Ile Pro His Lys Leu Val Thr		525
	530	535
His Leu Ile Val Glu Arg Leu Glu Ser Ala Cys Tyr Ile Ser Ser Ala		540
545	550	555
Phe Leu Arg Ala His Arg Ile Ala Arg Gln Leu His Ile Phe Leu		560
	565	570
Gly Asn Ser Asn Ile Ala Ser Thr Val Ile Asn Glu Ser Glu Val Glu		575
	580	585
Gly Glu Glu Ala Lys Gln Phe Leu Glu Asp Val Arg Asp Ser Phe Pro		590
	595	600
Gln Val Leu Ser Val Leu Lys Thr Arg Gln Val Thr His Tyr Val Leu		605
	610	615
Asn His Leu Asn Gly Tyr Ile Lys Asn Leu Glu Lys Val Gly Leu Leu		620
625	630	635
Glu Gly Lys Glu Val Ser His Leu His Asp Val Val Gln Ser Asp Leu		640
	645	650
Lys Lys Leu Leu Arg His Pro Pro Ser Leu Lys Leu Pro Asn Val Asp		655
	660	665
Asp Leu Ile Thr Ser Asn Pro Leu Leu Lys Asp Arg Ser Ser Phe Arg		670
	675	680
Ser Leu Ala Ile Gly Glu Thr Asp Ala		685
690	695	

<210> 19

<211> 697

<212> PRT

<213> Arabidopsis thaliana

<400> 19

Met Thr Ser Ile Ile Gly Ala Ala Leu Pro Tyr Lys Ser Pro Glu Lys	
1	5
Ala Ile Ala Ser Ser Ser Tyr Ser Ala Glu Asn Asp Ser Ser Pro Val	10
	15
	20
Asp Ala Val Ile Phe Ala Gly Thr Ser Leu Val Leu Gly Thr Ala Cys	25
	30
	35
Arg Tyr Leu Phe Asn Gly Thr Arg Val Pro Tyr Thr Val Val Leu Leu	40
	45
	50
	55
	60

Val	Ile	Gly	Ile	Phe	Leu	Gly	Ser	Leu	Glu	Tyr	Gly	Thr	Lys	His	Asn
65					70					75					80
Leu	Gly	Lys	Leu	Gly	His	Gly	Ile	Arg	Ile	Trp	Asn	Gly	Ile	Asn	Pro
				85					90					95	
Asp	Leu	Leu	Leu	Ala	Val	Phe	Leu	Pro	Val	Leu	Leu	Phe	Glu	Ser	Ser
			100					105					110		
Phe	Ser	Met	Asp	Val	His	Gln	Ile	Lys	Arg	Cys	Met	Gly	Gln	Met	Val
		115					120					125			
Leu	Leu	Ala	Gly	Pro	Gly	Val	Leu	Ile	Ser	Thr	Phe	Cys	Leu	Gly	Ala
	130					135					140				
Leu	Ile	Lys	Leu	Thr	Phe	Pro	Tyr	Asn	Trp	Asp	Trp	Lys	Thr	Ser	Leu
145					150					155					160
Leu	Leu	Gly	Gly	Leu	Leu	Gly	Ala	Thr	Asp	Pro	Val	Ala	Val	Val	Ala
				165					170					175	
Leu	Leu	Lys	Glu	Leu	Gly	Ala	Ser	Lys	Lys	Met	Thr	Thr	Leu	Ile	Asp
		180						185					190		
Gly	Glu	Ser	Leu	Met	Asn	Asp	Gly	Val	Ser	Val	Val	Val	Phe	Gln	Leu
		195					200					205			
Phe	Phe	Lys	Met	Val	Met	Gly	His	Asn	Ser	Asp	Trp	Gly	Ser	Ile	Ile
	210					215					220				
Lys	Phe	Leu	Val	Gln	Asn	Ser	Phe	Gly	Ala	Val	Gly	Ile	Gly	Leu	Ala
225				230						235					240
Phe	Gly	Ile	Ala	Ser	Val	Phe	Trp	Leu	Lys	Phe	Ile	Phe	Asn	Asp	Thr
			245						250					255	
Val	Ala	Gln	Ile	Thr	Val	Thr	Leu	Ser	Ala	Ser	Tyr	Phe	Ala	Tyr	Tyr
			260					265					270		
Thr	Ala	Gln	Glu	Trp	Ala	Gly	Val	Ser	Gly	Ile	Leu	Thr	Val	Met	Ile
		275					280					285			
Leu	Gly	Met	Phe	Phe	Ala	Ala	Phe	Ala	Arg	Thr	Ala	Phe	Lys	Gly	Asp
	290				295						300				
Ser	His	Gln	Ser	Leu	His	His	Phe	Trp	Tyr	Phe	Thr	Thr	Gln	Glu	Met
305				310						315					320
Ala	Ala	Tyr	Ile	Ala	Asn	Thr	Leu	Val	Phe	Met	Leu	Ser	Gly	Val	Ile
				325					330					335	
Ile	Ala	Glu	Ser	Val	Leu	Ser	Gly	Gln	Thr	Ile	Ser	Tyr	Lys	Ala	Ile
		340						345					350		
Lys	Trp	Lys	Phe	Ile	Ser	Gln	Phe	Arg	Tyr	Gly	Asn	Lys	Ala	Val	Leu
	355					360						365			
Gln	Phe	Leu	Phe	Leu	Thr	Gly	Gly	Ile	Val	Phe	Leu	Thr	Leu	Val	Val
	370					375					380				
Asn	Gly	Ser	Thr	Thr	Gln	Leu	Leu	Leu	His	Leu	Leu	Arg	Met	Asp	Thr
385					390					395					400
Leu	Thr	Ala	Thr	Lys	Lys	Arg	Ile	Leu	Glu	Tyr	Thr	Lys	Phe	Glu	Met
			405						410					415	
Met	Lys	Thr	Ala	Leu	Lys	Ala	Phe	Glu	Asn	Leu	Gly	Asp	Asp	Glu	Glu
		420						425					430		
Leu	Gly	Ser	Ala	Asp	Trp	Pro	Thr	Val	Ile	Arg	His	Ile	Ser	Ser	Leu
		435					440					445			
Lys	Asp	Leu	Glu	Gly	Arg	Gln	Val	Asn	Pro	His	Asp	Gly	Tyr	Glu	Ala
	450					455					460				
Gly	Ser	Leu	Asp	Pro	Thr	Asn	Ile	Met	Asp	Ile	Arg	Val	Gln	Ala	Ala
465					470					475					480
Tyr	Trp	Glu	Met	Leu	Asp	Asp	Gly	Arg	Ile	Thr	Gln	Cys	Thr	Ala	Asn
			485						490					495	
Val	Leu	Met	Gln	Ser	Val	Asp	Glu	Ala	Leu	Asp	Leu	Val	Ser	Thr	Ser
			500					505					510		
Ser	Leu	Ser	Asp	Trp	Arg	Gly	Leu	Glu	Pro	Arg	Val	His	Phe	Pro	Asn

Ala Ala Leu Val Phe Thr Gly Asn Phe Leu Tyr Leu Phe Leu Ala Ser
 210 215 220
 Thr Phe Leu Gly Val Leu Ile Gly Leu Leu Ser Ala Tyr Leu Ile Lys
 225 230 235 240
 Lys Ile Tyr Leu Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu Met
 245 250 255
 Ile Leu Met Ala Tyr Leu Ser Tyr Val Met Ala Glu Leu Phe Asp Leu
 260 265 270
 Ser Gly Ile Leu Thr Val Phe Ile Cys Gly Ile Val Met Ser His Tyr
 275 280 285
 Thr Trp His Asn Val Thr Phe Asn Ser Lys Val Thr Thr Arg His Ala
 290 295 300
 Phe Ala Thr Leu Ser Phe Ile Ala Glu Ile Phe Ile Phe Leu Tyr Val
 305 310 315 320
 Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Arg Phe Val Lys Asp Ser
 325 330 335
 Pro Gly Lys Ser Val Gly Val Ser Ala Ala Leu Leu Gly Leu Val Leu
 340 345 350
 Val Gly Arg Ala Cys Phe Val Phe Pro Leu Ser Leu Phe Ser Asn Cys
 355 360 365
 Leu Lys Arg Ser Glu His Asp Lys Phe Gly Leu Lys Leu Gln Val Thr
 370 375 380
 Ile Trp Trp Ala Gly Leu Met Arg Gly Ser Val Ser Met Ala Leu Ala
 385 390 395 400
 Tyr Asn Gln Phe Thr Arg Phe Gly His Thr Gln Gln Pro Gly Asn Ala
 405 410 415
 Val Met Ile Thr Ser Thr Ile Thr Ile Val Leu Phe Ser Thr Val Val
 420 425 430
 Phe Gly Leu Ile Thr Lys Pro Leu Val Arg Phe Leu Leu Pro Ser Ser
 435 440 445
 Gln Gly Phe Asn Asn Leu Ile Ser Ser Glu Gln Ser Phe Ala Arg Pro
 450 455 460
 Leu Leu Thr Asn Glu Gln Glu Leu Glu Leu Glu Met Gly Asn Val Asp
 465 470 475 480
 Pro Val Arg Pro Ser Gly Leu Ser Ile Leu Leu Lys Glu Pro Ser Tyr
 485 490 495
 Thr Ile His Asn His Trp Arg Arg Phe Asp Asp Ala Phe Met Arg Pro
 500 505 510
 Leu Phe Gly Arg Gly Phe Val Pro Asp Ala Pro Glu Leu Ser Lys
 515 520 525
 Gly Gly Cys Asp Gln Tyr
 530

<210> 21
 <211> 531
 <212> PRT
 <213> Lycopersicon esculentum

<400> 21
 Met Glu Asp His Leu Gln Ile Ser Pro Ala Gly Ala Lys Ala Ile Pro
 1 5 10 15
 Gly Lys Glu Gln Gln Ala Ala Gly Tyr Gly Ile Leu Leu Gln Ile Met
 20 25 30
 Met Leu Val Leu Ser Phe Val Ile Gly His Val Leu Arg Arg Arg His
 35 40 45
 Phe Tyr Tyr Ile Pro Glu Ala Ser Ala Ser Leu Leu Ile Gly Leu Ile

50	55	60
Val Gly Gly Leu Ala Asn Val Ser Asp Thr Glu Thr Ser Ile Arg Ala		
65	70	75
Trp Phe Asn Phe His Glu Glu Phe Phe Phe Leu Phe Leu Leu Pro Pro		80
	85	90
Ile Ile Phe Gln Ser Gly Phe Ser Leu Ser Pro Lys Pro Phe Phe Ser		95
	100	105
Asn Phe Gly Ala Ile Ile Thr Phe Ala Ile Leu Gly Thr Phe Ile Ala		110
	115	120
Ser Phe Val Thr Gly Ile Leu Val Tyr Leu Gly Gly Val Thr Tyr Leu		125
	130	135
Met Tyr Arg Leu Pro Phe Val Glu Cys Leu Met Phe Gly Ala Leu Ile		140
145	150	155
Ser Ala Thr Asp Pro Val Thr Val Leu Ser Ile Phe Gln Glu Leu Gly		160
	165	170
Thr Asp Val Asn Leu Tyr Ala Leu Val Phe Gly Glu Ser Val Leu Asn		175
	180	185
Asp Ala Met Ala Ile Ser Leu Tyr Arg Thr Met Ser Leu Val Arg Ser		190
	195	200
His Met Ser Thr Asp Gln Asn Tyr Phe Met Ile Thr Ile Arg Phe Val		205
210	215	220
Glu Thr Phe Met Gly Ser Leu Ser Ala Gly Val Gly Val Gly Phe Val		225
225	230	235
Ser Ala Leu Leu Phe Lys Tyr Ala Gly Leu Asp Ile Asp Asn Leu Gln		240
	245	250
Asn Leu Glu Ser Cys Leu Phe Val Leu Phe Pro Tyr Phe Ser Tyr Met		255
	260	265
Leu Ala Glu Gly Leu Gly Leu Ser Gly Ile Val Ser Ile Leu Phe Thr		270
	275	280
Gly Val Val Met Lys Arg Tyr Thr Tyr Pro Asn Leu Ser Glu Ser Ser		285
	290	295
Gln Arg Phe Val Ser Ala Phe Phe His Leu Ile Ser Ser Leu Ala Glu		300
305	310	315
Thr Phe Val Phe Ile Tyr Met Gly Phe Asp Ile Ala Met Glu Lys His		320
	325	330
Ser Trp Ser His Val Gly Phe Ile Phe Phe Ser Ile Leu Phe Ile Val		335
	340	345
Ile Ala Arg Ala Ala Asn Val Phe Gly Cys Ala Tyr Leu Val Asn Leu		350
	355	360
Val Arg Pro Pro His Gln Lys Ile Pro Ala Lys His Gln Lys Ala Leu		365
	370	375
Trp Tyr Ser Gly Leu Arg Gly Ala Met Ala Phe Ala Leu Ala Leu Gln		380
385	390	395
Pro Val His Asp Leu Pro Glu Gly His Gly Gln Ala Ile Phe Thr Ala		400
	405	410
Thr Thr Ala Ile Val Val Leu Thr Val Leu Ile Ile Gly Gly Ser Ala		415
	420	425
Gly Thr Met Leu Glu Ala Leu Glu Val Val Gly Asp Gly Gln Ser Gly		430
	435	440
Ser Met Asp Glu Thr Phe Glu Gly Asn Asn Gly Tyr Ile Ala Pro Ser		445
	450	455
Tyr Arg Asp Glu Ser Tyr Asp Gly Glu Pro Ser Ser Gly Asn Arg Phe		460
465	470	475
Arg Met Lys Leu Lys Glu Phe His Lys Ser Thr Thr Ser Phe Ser Ala		480
	485	490
Leu Asp Lys Asn Tyr Leu Thr Pro Phe Thr Thr Gln Gly Gly Asp		495
	500	505
		510

Glu Asp Glu Asp Glu Pro Ile Met His Ser Ser Arg Arg Ala Gly Tyr
 515 520 525
 Asp Gly His
 530

<210> 22
 <211> 535
 <212> PRT
 <213> Oryza sativa

<400> 22
 Met Gly Met Glu Val Ala Ala Ala Arg Leu Gly Ala Leu Tyr Thr Thr
 1 5 10 15
 Ser Asp Tyr Ala Ser Val Val Ser Ile Asn Leu Phe Val Ala Leu Leu
 20 25 30
 Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg Trp Val
 35 40 45
 Asn Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Cys Thr Gly Val Val
 50 55 60
 Ile Leu Leu Met Thr Lys Gly Lys Ser Ser His Leu Phe Val Phe Ser
 65 70 75 80
 Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala
 85 90 95
 Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Met Thr Ile
 100 105 110
 Thr Leu Phe Gly Ala Val Gly Thr Met Ile Ser Phe Phe Thr Ile Ser
 115 120 125
 Ile Ala Ala Ile Ala Ile Phe Ser Arg Met Asn Ile Gly Thr Leu Asp
 130 135 140
 Val Gly Asp Phe Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp Ser
 145 150 155 160
 Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Thr Pro Phe Leu Tyr
 165 170 175
 Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Ile Val
 180 185 190
 Leu Phe Asn Ala Leu Gln Asn Phe Asp Leu Val His Ile Asp Ala Ala
 195 200 205
 Val Val Leu Lys Phe Leu Gly Asn Phe Phe Tyr Leu Phe Leu Ser Ser
 210 215 220
 Thr Phe Leu Gly Val Phe Ala Gly Leu Leu Ser Ala Tyr Ile Ile Lys
 225 230 235 240
 Lys Leu Tyr Ile Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu Met
 245 250 255
 Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Leu Asp Leu
 260 265 270
 Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His Tyr
 275 280 285
 Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys His Ala
 290 295 300
 Phe Ala Thr Leu Ser Phe Ile Ala Glu Thr Phe Leu Phe Leu Tyr Val
 305 310 315 320
 Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Glu Phe Ala Ser Asp Arg
 325 330 335
 Pro Gly Lys Ser Ile Gly Ile Ser Ser Ile Leu Leu Gly Leu Val Leu
 340 345 350
 Ile Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser Asn Leu

Gly	Lys	Ala	Leu	Gln	Leu	Ile	Gly	Asn	Phe	Leu	Tyr	Leu	Phe	Ala	Ser	210	215	220
Ser	Thr	Phe	Leu	Gly	Val	Ala	Val	Gly	Leu	Leu	Ser	Ala	Phe	Ile	Ile	225	230	235
Lys	Lys	Leu	Tyr	Phe	Gly	Arg	His	Ser	Thr	Asp	Arg	Glu	Val	Ala	Ile	245	250	255
Met	Ile	Leu	Met	Ala	Tyr	Leu	Ser	Tyr	Met	Leu	Ala	Glu	Leu	Phe	Tyr	260	265	270
Leu	Ser	Gly	Ile	Leu	Thr	Val	Phe	Cys	Gly	Ile	Val	Met	Ser	His		275	280	285
Tyr	Thr	Trp	His	Asn	Val	Thr	Glu	Ser	Ser	Arg	Val	Thr	Thr	Lys	His	290	295	300
Thr	Phe	Ala	Thr	Leu	Ser	Phe	Ile	Ala	Glu	Ile	Phe	Ile	Phe	Leu	Tyr	305	310	315
Val	Gly	Met	Asp	Ala	Leu	Asp	Ile	Glu	Lys	Trp	Lys	Phe	Val	Ser	Asp	325	330	335
Ser	Pro	Gly	Thr	Ser	Ile	Lys	Val	Ser	Ser	Ile	Leu	Leu	Gly	Leu	Val	340	345	350
Leu	Val	Gly	Arg	Gly	Ala	Phe	Val	Phe	Pro	Leu	Ser	Phe	Leu	Ser	Asn	355	360	365
Leu	Thr	Lys	Lys	Asn	Pro	Glu	Asp	Lys	Ile	Ser	Phe	Asn	Gln	Gln	Val	370	375	380
Thr	Ile	Trp	Trp	Ala	Gly	Leu	Met	Arg	Gly	Ala	Val	Ser	Met	Ala	Leu	385	390	395
Ala	Tyr	Asn	Gln	Phe	Thr	Arg	Gly	Gly	His	Thr	Gln	Leu	Arg	Ala	Asn	405	410	415
Ala	Ile	Met	Ile	Thr	Ser	Thr	Ile	Thr	Val	Val	Leu	Phe	Ser	Thr	Val	420	425	430
Val	Phe	Gly	Leu	Met	Thr	Lys	Pro	Leu	Ile	Leu	Leu	Leu	Leu	Pro	Ser	435	440	445
Gln	Lys	His	Leu	Ile	Arg	Met	Ile	Ser	Ser	Glu	Pro	Met	Thr	Pro	Lys	450	455	460
Ser	Phe	Ile	Val	Pro	Leu	Leu	Asp	Ser	Thr	Gln	Asp	Ser	Glu	Ala	Asp	465	470	475
Leu	Gly	Arg	His	Val	Pro	Arg	Pro	His	Ser	Leu	Arg	Met	Leu	Leu	Ser	485	490	495
Thr	Pro	Ser	His	Thr	Val	His	Tyr	Tyr	Trp	Arg	Lys	Phe	Asp	Asn	Ala	500	505	510
Phe	Met	Arg	Pro	Val	Phe	Gly	Gly	Arg	Gly	Phe	Val	Pro	Phe	Val	Pro	515	520	525
Gly	Ser	Pro	Thr	Glu	Pro	Val	Glu	Pro	Thr	Glu	Pro	Arg	Pro	Ala	Glu	530	535	540
Ser	Arg	Pro	Thr	Glu	Pro	Thr	Asp	Glu								545	550	

<210> 24

<211> 542

<212> PRT

<213> Citrus x paradisi

<400> 24

Met	Asp	Gln	Ala	Ile	Ser	Ser	Val	Val	Arg	Lys	Leu	Gln	Met	Val	Asn	1	5	10	15
Thr	Ser	Asp	His	Asn	Ser	Val	Val	Ser	Ile	Asn	Ile	Phe	Val	Ala	Leu	20	25	30	
Pro	Cys	Ala	Ser	Ile	Val	Ile	Gly	His	Leu	Leu	Glu	Glu	Ser	Arg	Trp				

Leu Thr Thr Pro Thr His Thr Val His Tyr Tyr Trp Arg Lys Phe Asp
 500 505 510
 Asp Ala Phe Met Arg Pro Val Phe Gly Gly Arg Gly Phe Ala Pro Phe
 515 520 525
 Val Pro Gly Ser Pro Thr Glu Arg Ser Val Arg Gly Gly Gln
 530 535 540

<210> 25
 <211> 546
 <212> PRT
 <213> Triticum aestivum

<400> 25
 Met Gly Leu Asp Leu Gly Ala Leu Ala Leu Lys Tyr Thr Gly Leu Ala
 1 5 10 15
 Val Ser Asp His Asp Ser Ile Val Ala Ile Asn Ile Phe Ile Ala Leu
 20 25 30
 Leu Cys Gly Cys Ile Val Phe Gly His Leu Leu Glu Gly Asn Arg Trp
 35 40 45
 Val Asn Glu Ser Thr Thr Ala Leu Val Leu Gly Leu Ile Thr Gly Gly
 50 55 60
 Val Ile Leu Ile Cys Thr Lys Gly Val Asn Ser Arg Ile Leu Ile Phe
 65 70 75 80
 Ser Glu Asp Ile Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn
 85 90 95
 Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ala Thr
 100 105 110
 Ile Ile Leu Phe Gly Ala Ala Gly Thr Leu Ile Ser Phe Val Ile Ile
 115 120 125
 Thr Phe Gly Ala Met Gly Leu Phe Ser Lys Leu Asp Val Gly Pro Leu
 130 135 140
 Glu Leu Gly Asp Tyr Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp
 145 150 155 160
 Ser Val Cys Thr Leu Gln Val Leu Asn Gln Asp Glu Ala Pro Leu Leu
 165 170 175
 Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
 180 185 190
 Val Leu Phe Asn Ala Ile Gln Asn Ile Asp Ile Asn His Phe Asp Val
 195 200 205
 Phe Val Leu Leu Gln Phe Ile Gly Lys Phe Leu Tyr Leu Phe Phe Thr
 210 215 220
 Ser Thr Val Leu Gly Val Ala Ala Gly Leu Leu Ser Ala Tyr Ile Ile
 225 230 235 240
 Lys Lys Leu Cys Phe Ala Arg His Ser Thr Asp Arg Glu Val Ala Ile
 245 250 255
 Met Ile Leu Met Ala Tyr Leu Ser Tyr Met Leu Ser Met Leu Leu Asp
 260 265 270
 Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met Ser His
 275 280 285
 Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr Lys His
 290 295 300
 Thr Phe Ala Thr Leu Ser Phe Ile Ala Glu Ile Phe Leu Phe Leu Tyr
 305 310 315 320
 Val Gly Met Asp Ala Leu Asp Ile Asp Lys Trp Lys Leu Ala Ser Ser
 325 330 335
 Ser Pro Lys Lys Pro Ile Ala Leu Ser Ala Val Ile Leu Gly Leu Val

Phe Leu Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr
180 185 190
Ser Val Val Leu Phe Asn Ala Leu Gln Asn Phe Asp Pro Asn Gln Ile
195 200 205
Asp Ala Ile Val Ile Leu Lys Phe Leu Gly Asn Phe Cys Tyr Leu Phe
210 215 220
Val Ser Ser Thr Phe Leu Gly Val Phe Thr Gly Leu Leu Ser Ala Tyr
225 230 235 240
Val Ile Lys Lys Leu Tyr Ile Gly Arg His Ser Thr Asp Arg Glu Val
245 250 255
Ala Leu Val Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu
260 265 270
Leu Asp Leu Ser Gly Ile Leu Thr Val Phe Phe Cys Gly Ile Val Met
275 280 285
Ser His Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Val Thr Thr
290 295 300
Lys His Ala Phe Ala Thr Leu Ser Phe Ile Ala Glu Thr Phe Leu Phe
305 310 315 320
Leu Tyr Val Gly Met Asp Ala Leu Asp Ile Glu Lys Trp Lys Phe Ala
325 330 335
Ser Asp Ser Pro Gly Lys Ser Ile Gly Ile Ser Ser Ile Leu Leu Gly
340 345 350
Leu Val Leu Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu
355 360 365
Ser Asn Leu Thr Lys Lys Thr Glu Leu Glu Lys Ile Ser Trp Arg Gln
370 375 380
Gln Ile Val Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Ile
385 390 395 400
Ala Leu Ala Tyr Asn Lys Phe Thr Arg Ser Gly His Thr Gln Leu His
405 410 415
Gly Asn Ala Ile Met Ile Thr Ser Thr Ile Thr Val Val Leu Phe Ser
420 425 430
Thr Met Leu Phe Gly Ile Leu Thr Lys Pro Leu Ile Arg Phe Leu Leu
435 440 445
Pro Ala Ser Ser Asn Gly Ala Ala Ser Asp Pro Ala Ser Pro Lys Ser
450 455 460
Leu His Ser Pro Leu Leu Thr Ser Gln Leu Gly Ser Asp Leu Glu Ala
465 470 475 480
Pro Leu Pro Ile Val Arg Pro Ser Ser Leu Arg Met Leu Ile Thr Lys
485 490 495
Pro Thr His Thr Ile His Tyr Tyr Trp Arg Lys Phe Asp Asp Ala Leu
500 505 510
Met Arg Pro Met Phe Gly Gly Arg Gly Phe Val Pro Tyr Ser Pro Gly
515 520 525
Ser Pro Thr Asp Pro Asn Val Leu Val Glu
530 535

<210> 27
<211> 546
<212> PRT
<213> Triticum aestivum

<400> 27
Met Gly Leu Asp Leu Gly Ala Leu Ala Leu Lys Tyr Thr Gly Leu Ala
1 5 10 15
Val Ser Asp His Asp Ser Ile Val Ala Ile Asn Ile Phe Ile Ala Leu

Pro Gln Thr Asn Leu Gln Tyr Leu Leu Thr Met Pro Thr Arg Ser Ala
485 490 495
His Arg Val Trp Arg Lys Phe Asp Asp Lys Phe Met Arg Pro Met Phe
500 505 510
Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro Ile Glu Arg
515 520 525
Ser Val His Gly Pro Gly Leu Leu Gly Thr Val Thr Glu Ala Glu Asp
530 535 540
Arg Ser
545

<210> 28
<211> 540
<212> PRT
<213> Zea mays

<400> 28
Met Gly Leu Gly Val Val Ala Glu Leu Val Arg Leu Gly Val Leu Ser
1 5 10 15
Ser Thr Ser Asp His Ala Ser Val Val Ser Ile Asn Leu Phe Val Ala
20 25 30
Leu Leu Cys Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg
35 40 45
Trp Val Asn Glu Ser Thr Ala Leu Ile Val Gly Leu Gly Thr Gly Thr
50 55 60
Val Ile Leu Met Ile Ser Arg Gly Val Val Ile His Val Leu Val Phe
65 70 75 80
Ser Glu Asp Leu Phe Phe Phe Tyr Leu Leu Pro Pro Ile Ile Phe Asn
85 90 95
Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile Thr
100 105 110
Ile Thr Leu Phe Gly Ala Val Gly Thr Leu Ile Ser Phe Thr Val Ile
115 120 125
Ser Leu Gly Ala Leu Gly Leu Ile Ser Arg Leu Asn Ile Gly Ala Leu
130 135 140
Glu Leu Gly Asp Tyr Leu Ala Leu Gly Ala Ile Phe Ser Ala Thr Asp
145 150 155 160
Ser Val Cys Thr Leu Gln Val Leu Ser Gln Asp Glu Thr Pro Phe Leu
165 170 175
Tyr Ser Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val
180 185 190
Val Val Phe Asn Ala Leu Gln Asn Phe Asp Ile Thr His Ile Asp Ala
195 200 205
Glu Val Val Phe His Leu Leu Gly Asn Phe Phe Tyr Leu Phe Leu Leu
210 215 220
Ser Thr Val Leu Gly Val Ala Thr Gly Leu Ile Ser Ala Leu Val Ile
225 230 235 240
Lys Lys Leu Tyr Phe Gly Arg His Ser Thr Asp Arg Glu Val Ala Leu
245 250 255
Met Met Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Ala
260 265 270
Leu Ser Gly Ile Leu Thr Val Phe Phe Gly Cys Ile Val Met Ser His
275 280 285
Tyr Thr Trp His Asn Val Thr Glu Ser Ser Arg Ile Thr Thr Lys His
290 295 300
Ala Phe Ala Thr Leu Ser Phe Leu Ala Glu Thr Phe Leu Phe Leu Tyr

305					310					315				320	
Val	Gly	Met	Asp	Ala	Leu	Asp	Ile	Asp	Lys	Trp	Arg	Ser	Val	Ser	Asp
				325					330					335	
Thr	Pro	Gly	Lys	Ser	Leu	Ala	Ile	Ser	Ser	Ile	Leu	Met	Gly	Leu	Val
				340					345					350	
Met	Val	Gly	Arg	Ala	Ala	Phe	Val	Phe	Pro	Leu	Ser	Phe	Leu	Ser	Asn
				355					360					365	
Leu	Ala	Lys	Lys	Thr	Glu	His	Glu	Lys	Ile	Ser	Trp	Lys	Gln	Gln	Val
				370					375					380	
Val	Ile	Trp	Trp	Ala	Gly	Leu	Met	Arg	Gly	Ala	Val	Ser	Met	Ala	Leu
385					390					395					400
Ala	Tyr	Lys	Lys	Phe	Thr	Arg	Ala	Gly	His	Thr	Gln	Val	Arg	Gly	Asn
				405					410					415	
Ala	Ile	Met	Ile	Thr	Ser	Thr	Ile	Ile	Val	Val	Leu	Phe	Ser	Thr	Met
				420					425					430	
Val	Phe	Gly	Leu	Leu	Thr	Lys	Pro	Leu	Ile	Asn	Leu	Leu	Ile	Pro	His
				435					440					445	
Arg	Asn	Ala	Thr	Ser	Met	Leu	Ser	Asp	Asp	Ser	Ser	Pro	Lys	Ser	Leu
				450					455					460	
His	Ser	Pro	Leu	Leu	Thr	Ser	Gln	Leu	Gly	Ser	Asp	Leu	Glu	Glu	Pro
465					470					475					480
Thr	Asn	Ile	Pro	Arg	Pro	Ser	Ser	Ile	Arg	Gly	Glu	Phe	Leu	Thr	Met
				485					490					495	
Thr	Arg	Thr	Val	His	Arg	Tyr	Trp	Arg	Lys	Phe	Asp	Asp	Ala	Phe	Met
				500					505					510	
Arg	Pro	Met	Phe	Gly	Gly	Arg	Gly	Phe	Val	Pro	Phe	Val	Pro	Gly	Ser
				515					520					525	
Pro	Thr	Glu	Arg	Asn	Pro	Pro	Asp	Leu	Ser	Lys	Ala				
				530					535					540	

<210> 29
 <211> 540
 <212> PRT
 <213> Zea mays

<400> 29															
Met	Gly	Leu	Gly	Val	Asp	Ala	Glu	Thr	Val	Arg	Leu	Gly	Val	Leu	Ser
1				5					10					15	
Ser	Thr	Ser	Asp	His	Ala	Ser	Val	Val	Ser	Asn	Asn	Phe	Phe	Val	Ala
				20					25					30	
Leu	Leu	Cys	Ala	Cys	Ile	Val	Leu	Gly	His	Leu	Leu	Glu	Glu	Asn	Arg
				35					40					45	
Met	Val	Asn	Glu	Ser	Ile	Thr	Ala	Leu	Leu	Val	Gly	Leu	Gly	Thr	Gly
				50					55					60	
Thr	Val	Ile	Leu	Met	Ile	Ser	Arg	Gly	Val	Ser	Ile	His	Val	Leu	Val
65					70					75					80
Phe	Ser	Glu	Asp	Leu	Phe	Phe	Ile	Tyr	Leu	Leu	Pro	Pro	Ile	Ile	Phe
				85					90					95	
Asn	Ala	Gly	Phe	Gln	Val	Lys	Lys	Lys	Gln	Phe	Phe	Arg	Asn	Phe	Ile
				100					105					110	
Thr	Ile	Ile	Leu	Phe	Gly	Ala	Ile	Gly	Thr	Leu	Ile	Ser	Phe	Val	Ile
				115					120					125	
Ile	Ser	Leu	Gly	Ala	Met	Gly	Leu	Phe	Lys	Lys	Leu	Asp	Val	Gly	Pro
				130					135					140	
Leu	Glu	Leu	Gly	Asp	Tyr	Leu	Ala	Ile	Gly	Ala	Ile	Phe	Ser	Ala	Thr
145					150					155					160

Asp	Ser	Val	Cys	Thr	Leu	Gln	Val	Leu	Asn	Gln	Asp	Glu	Thr	Pro	Leu	165	170	175
Leu	Tyr	Ser	Leu	Val	Phe	Gly	Glu	Gly	Val	Val	Asn	Asp	Ala	Thr	Ser	180	185	190
Ile	Val	Val	Phe	Asn	Ala	Leu	Gln	Asn	Phe	Asp	Ile	Thr	His	Ile	Asn	195	200	205
Ala	Glu	Val	Val	Phe	His	Leu	Leu	Gly	Asn	Phe	Leu	Tyr	Leu	Phe	Leu	210	215	220
Leu	Ser	Thr	Val	Leu	Gly	Val	Ala	Thr	Gly	Leu	Ile	Ser	Ala	Leu	Val	225	230	235
Ile	Lys	Lys	Ile	Tyr	Phe	Gly	Arg	His	Ser	Thr	Asp	Arg	Glu	Val	Ala	245	250	255
Leu	Met	Met	Leu	Met	Ala	Tyr	Leu	Ser	Tyr	Met	Leu	Ala	Glu	Leu	Phe	260	265	270
Ala	Leu	Ser	Gly	Ile	Leu	Thr	Val	Phe	Phe	Gly	Cys	Ile	Val	Met	Ser	275	280	285
His	Tyr	Thr	Trp	His	Asn	Val	Thr	Glu	Ser	Ser	Arg	Ile	Thr	Thr	Lys	290	295	300
His	Ala	Phe	Ala	Thr	Leu	Ser	Phe	Leu	Ala	Glu	Thr	Phe	Ile	Phe	Leu	305	310	315
Tyr	Val	Gly	Met	Asp	Ala	Leu	Asp	Ile	Glu	Lys	Trp	Arg	Ser	Val	Ser	325	330	335
Asp	Thr	Pro	Gly	Lys	Ser	Ile	Ala	Ile	Ser	Ser	Ile	Leu	Met	Gly	Leu	340	345	350
Val	Met	Leu	Gly	Arg	Ala	Ala	Phe	Val	Phe	Pro	Leu	Ser	Phe	Leu	Ser	355	360	365
Asn	Leu	Ala	Lys	Lys	Asn	Glu	His	Glu	Lys	Ile	Ser	Trp	Lys	Gln	Gln	370	375	380
Val	Val	Ile	Trp	Trp	Ser	Gly	Leu	Met	Arg	Gly	Ala	Val	Ser	Met	Ala	385	390	395
Leu	Ala	Tyr	Asn	Lys	Phe	Thr	Arg	Ala	Gly	His	Thr	Glu	Val	Arg	Gly	405	410	415
Asn	Glu	Ile	Met	Ile	Thr	Ser	Thr	Ile	Thr	Val	Val	Leu	Phe	Ser	Thr	420	425	430
Val	Val	Phe	Gly	Leu	Leu	Thr	Lys	Pro	Leu	Ile	Arg	Leu	Leu	Met	Pro	435	440	445
His	Arg	His	Leu	Thr	Met	Leu	Ser	Asp	Asp	Ser	Thr	Pro	Lys	Ser	Leu	450	455	460
His	Ser	Pro	Leu	Leu	Thr	Ser	Gln	Leu	Gly	Ser	Ser	Ile	Glu	Glu	Pro	465	470	475
Thr	Gln	Ile	Pro	Arg	Pro	Thr	Asn	Ile	Arg	Gly	Glu	Phe	Thr	Thr	Met	485	490	495
Thr	Arg	Thr	Val	His	Arg	Tyr	Trp	Arg	Lys	Phe	Asp	Asp	Lys	Phe	Met	500	505	510
Arg	Pro	Met	Phe	Gly	Gly	Arg	Gly	Phe	Val	Pro	Phe	Val	Pro	Gly	Ser	515	520	525
Pro	Thr	Glu	Arg	Asn	Pro	His	Asp	Leu	Ser	Lys	Pro					530	535	540

<210> 30

<211> 539

<212> PRT

<213> Zea mays

<400> 30

Met Ser Ile Gly Leu Thr Ala Glu Thr Val Thr Asn Lys Leu Ala Ser

1				5				10					15				
Ala	Glu	His	Pro	Gln	Val	Val	Pro	Asn	Ser	Val	Phe	Ile	Ala	Leu	Leu		
			20					25					30				
Cys	Leu	Cys	Leu	Val	Ile	Gly	His	Leu	Leu	Glu	Glu	Asn	Arg	Trp	Val		
		35					40					45					
Asn	Glu	Ser	Ile	Thr	Ala	Ile	Leu	Val	Gly	Ala	Ala	Thr	Gly	Thr	Val		
	50					55					60						
Ile	Leu	Leu	Ile	Ser	Lys	Gly	Lys	Ser	Ser	His	Ile	Leu	Val	Phe	Asp		
65					70					75					80		
Glu	Glu	Leu	Phe	Phe	Ile	Tyr	Leu	Leu	Pro	Pro	Ile	Ile	Phe	Asn	Ala		
				85					90					95			
Gly	Phe	Gln	Val	Lys	Lys	Lys	Gln	Phe	Phe	Arg	Asn	Phe	Ile	Thr	Ile		
			100					105					110				
Ile	Leu	Phe	Gly	Ala	Ile	Gly	Thr	Leu	Ile	Ser	Phe	Val	Ile	Ile	Ser		
	115						120					125					
Leu	Gly	Ala	Met	Gly	Leu	Phe	Lys	Lys	Leu	Asp	Val	Gly	Pro	Leu	Glu		
	130					135				140							
Leu	Gly	Asp	Tyr	Leu	Ala	Ile	Gly	Ala	Ile	Phe	Ser	Ala	Thr	Asp	Ser		
145					150					155					160		
Val	Cys	Thr	Leu	Gln	Val	Leu	Asn	Gln	Asp	Glu	Thr	Pro	Leu	Leu	Tyr		
				165					170					175			
Ser	Leu	Val	Phe	Gly	Glu	Gly	Val	Val	Asn	Asp	Ala	Thr	Ser	Val	Val		
		180						185					190				
Leu	Phe	Asn	Ala	Val	Gln	Lys	Ile	Asp	Phe	Glu	His	Leu	Thr	Gly	Glu		
	195					200					205						
Val	Ala	Leu	Gln	Val	Phe	Gly	Asn	Phe	Leu	Tyr	Leu	Phe	Ser	Thr	Ser		
	210				215					220							
Thr	Val	Leu	Gly	Ile	Ala	Thr	Gly	Leu	Ile	Thr	Ala	Phe	Val	Leu	Lys		
225				230						235					240		
Thr	Leu	Tyr	Phe	Gly	Arg	His	Ser	Thr	Thr	Arg	Glu	Leu	Ala	Ile	Met		
				245					250					255			
Val	Leu	Met	Ala	Tyr	Leu	Ser	Phe	Met	Leu	Ala	Glu	Leu	Phe	Ser	Leu		
		260					265					270					
Ser	Gly	Ile	Ile	Thr	Val	Phe	Phe	Cys	Gly	Val	Leu	Met	Ser	His	Val		
	275						280					285					
Thr	Trp	His	Asn	Val	Thr	Glu	Ser	Ser	Arg	Ile	Thr	Ser	Arg	His	Val		
	290				295						300						
Phe	Ala	Met	Leu	Ser	Phe	Ile	Ala	Glu	Thr	Phe	Leu	Phe	Leu	Tyr	Val		
305				310					315					320			
Gly	Thr	Asp	Ala	Leu	Asp	Phe	Thr	Lys	Trp	Lys	Thr	Ser	Ser	Leu	Ser		
			325					330						335			
Phe	Gly	Lys	Ser	Leu	Gly	Val	Ser	Ser	Val	Leu	Leu	Gly	Leu	Val	Leu		
		340						345				350					
Val	Gly	Arg	Ala	Ala	Phe	Val	Phe	Pro	Leu	Ser	Phe	Leu	Ser	Asn	Leu		
	355					360					365						
Ser	Lys	Lys	His	Pro	Gly	Glu	Lys	Ile	Thr	Ile	Arg	Gln	Gln	Val	Val		
	370				375					380							
Ile	Trp	Trp	Ala	Gly	Leu	Met	Arg	Gly	Ala	Val	Ser	Ile	Ala	Leu	Ala		
385				390					395					400			
Phe	Asn	Lys	Phe	Thr	Arg	Ala	Gly	His	Thr	Gln	Val	Arg	Gly	Asn	Ala		
			405					410					415				
Ile	Met	Ile	Thr	Ser	Thr	Ile	Ile	Val	Val	Leu	Phe	Ser	Thr	Val	Val		
		420						425				430					
Phe	Gly	Leu	Leu	Thr	Lys	Pro	Leu	Ile	Asn	Leu	Leu	Ile	Pro	His	Arg		
	435					440					445						
Asn	Ala	Thr	Ser	Met	Leu	Ser	Asp	Asp	Ser	Ser	Pro	Lys	Ser	Leu	His		
	450					455					460						

Ser Pro Leu Leu Thr Ser Gln Leu Ile Ser Ser Ile Glu Glu Pro Thr
 465 470 475 480
 Gln Ile Pro Arg Pro Thr Asn Ile Arg Gly Glu Phe Met Thr Met Thr
 485 490 495
 Arg Thr Val His Arg Tyr Trp Arg Lys Phe Asp Asp Lys Phe Met Arg
 500 505 510
 Pro Met Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro Gly Ser Pro
 515 520 525
 Thr Glu Arg Ser Ser Pro Asp Leu Ser Lys Ala
 530 535

<210> 31
 <211> 538
 <212> PRT
 <213> Zea mays

<400> 31
 Met Gly Tyr Gln Val Val Ala Ala Gln Leu Lys Leu Ala Ser Ser Ala
 1 5 10 15
 Asp His Ala Ser Val Val Ile Ile Thr Leu Phe Val Ala Leu Leu Cys
 20 25 30
 Ala Cys Ile Val Leu Gly His Leu Leu Glu Glu Asn Arg Trp Leu Asn
 35 40 45
 Glu Ser Ile Thr Ala Leu Ile Ile Gly Leu Gly Thr Gly Val Val Ile
 50 55 60
 Leu Leu Ile Ser Arg Gly Lys Asn Ser Arg Leu Leu Val Phe Ser Glu
 65 70 75 80
 Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe Asn Ala Gly
 85 90 95
 Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Met Thr Ile Thr
 100 105 110
 Leu Phe Gly Ala Val Gly Thr Met Ile Ser Phe Phe Thr Ile Ser Leu
 115 120 125
 Gly Ala Ile Ala Thr Phe Ser Arg Met Ser Ile Gly Thr Leu Asp Val
 130 135 140
 Gly Asp Phe Leu Ala Ile Gly Ala Ile Phe Ser Ala Thr Asp Ser Val
 145 150 155 160
 Cys Thr Leu Gln Val Leu His Gln Asp Glu Thr Pro Phe Leu Tyr Ser
 165 170 175
 Leu Val Phe Gly Glu Gly Val Val Asn Asp Ala Thr Ser Val Val Leu
 180 185 190
 Phe Asn Ala Val Gln Lys Ile Gln Phe Thr His Ile Asn Ala Trp Thr
 195 200 205
 Ala Leu Gln Leu Ile Gly Asn Phe Leu Tyr Leu Phe Ser Thr Ser Thr
 210 215 220
 Leu Leu Gly Ile Gly Thr Gly Leu Ile Thr Ala Phe Val Leu Lys Lys
 225 230 235 240
 Leu Tyr Phe Gly Arg His Ser Thr Thr Arg Glu Leu Ala Ile Met Ile
 245 250 255
 Leu Met Ala Tyr Leu Ser Tyr Met Leu Ala Glu Leu Phe Ser Leu Ser
 260 265 270
 Gly Leu Leu Thr Val Phe Phe Cys Gly Val Leu Met Ser His Val Thr
 275 280 285
 Trp His Asn Val Thr Glu Ser Ser Arg Thr Thr Ser Arg His Val Phe
 290 295 300
 Ala Thr Leu Ser Phe Ile Ser Glu Thr Phe Ile Phe Leu Tyr Val Gly

305					310					315					320
Met	Asp	Ala	Leu	Asp	Phe	Glu	Lys	Trp	Lys	Thr	Ser	Ser	Leu	Ser	Phe
				325					330					335	
Gly	Gly	Thr	Leu	Gly	Val	Ser	Gly	Val	Leu	Met	Gly	Leu	Val	Met	Leu
			340					345					350		
Gly	Arg	Ala	Ala	Phe	Val	Phe	Pro	Leu	Ser	Phe	Leu	Ser	Asn	Leu	Ala
		355					360					365			
Lys	Lys	His	Gln	Ser	Glu	Lys	Ile	Ser	Phe	Arg	Met	Gln	Val	Val	Ile
	370					375				380					
Trp	Trp	Ala	Gly	Leu	Met	Arg	Gly	Ala	Val	Ser	Met	Ala	Leu	Ala	Leu
385					390					395					400
Asn	Lys	Phe	Thr	Arg	Ser	Gly	His	Thr	Gln	Leu	His	Gly	Asn	Ala	Ile
				405					410					415	
Met	Ile	Thr	Ser	Thr	Ile	Thr	Val	Val	Leu	Phe	Ser	Thr	Met	Val	Phe
			420					425					430		
Gly	Met	Ile	Thr	Lys	Pro	Leu	Ile	Arg	Leu	Leu	Leu	Pro	Ala	Ser	Gly
		435					440					445			
His	Pro	Arg	Glu	Leu	Ser	Glu	Pro	Ser	Ser	Pro	Lys	Ser	Phe	His	Ser
	450					455				460					
Pro	Leu	Leu	Thr	Ser	Gln	Gln	Gly	Ser	Asp	Leu	Glu	Ser	Thr	Thr	Asn
465					470					475					480
Ile	Val	Arg	Pro	Ser	Ser	Leu	Arg	Gly	Leu	Leu	Thr	Lys	Pro	Thr	His
				485					490					495	
Thr	Val	His	Tyr	Trp	Arg	Lys	Phe	Asp	Asp	Ala	Leu	Met	Arg	Pro	
			500				505					510			
Val	Phe	Gly	Gly	Arg	Gly	Phe	Val	Pro	Phe	Val	Pro	Gly	Ser	Pro	Thr
		515				520					525				
Glu	Arg	Asn	Pro	Pro	Asp	Leu	Ser	Lys	Ala						
	530					535									

<210> 32
 <211> 545
 <212> PRT
 <213> Zea mays

<400> 32															
Met	Ser	Met	Gly	Tyr	Gln	Val	Val	Ala	Ala	Gln	Leu	Lys	Val	Ala	Ser
1				5					10					15	
Ser	Ala	Asp	His	Ala	Ser	Val	Val	Ile	Ile	Thr	Leu	Phe	Val	Ala	Leu
			20					25					30		
Leu	Cys	Ala	Cys	Ile	Val	Leu	Gly	His	Leu	Leu	Glu	Glu	Asn	Arg	Trp
		35					40					45			
Leu	Asn	Glu	Ser	Ile	Thr	Ala	Leu	Ile	Ile	Gly	Leu	Cys	Thr	Gly	Gly
	50					55				60					
Val	Ile	Leu	Met	Thr	Thr	Lys	Gly	Lys	Ser	Ser	His	Val	Leu	Val	Phe
65					70					75					80
Ser	Glu	Asp	Leu	Phe	Phe	Ile	Tyr	Leu	Leu	Pro	Pro	Ile	Ile	Phe	Ile
				85					90					95	
Ala	Gly	Phe	Gln	Val	Lys	Lys	Lys	Gln	Phe	Phe	Arg	Asn	Phe	Met	Thr
			100					105					110		
Ile	Thr	Leu	Phe	Gly	Ala	Val	Gly	Thr	Met	Ile	Ser	Phe	Phe	Thr	Ile
		115					120					125			
Ser	Leu	Gly	Ala	Ile	Ala	Ile	Phe	Ser	Arg	Met	Asn	Ile	Gly	Thr	Leu
	130					135					140				
Asp	Val	Gly	Asp	Phe	Leu	Ala	Ile	Gly	Ala	Ile	Phe	Ser	Ala	Thr	Asp
145					150					155					160

Ser	Val	Cys	Thr	Leu	Gln	Val	Leu	His	Gln	Asp	Glu	Thr	Pro	Phe	Leu			
				165					170					175				
Tyr	Ser	Leu	Val	Phe	Gly	Glu	Gly	Val	Val	Asn	Asp	Ala	Thr	Ser	Val			
				180				185					190					
Val	Leu	Phe	Asn	Ala	Val	Gln	Lys	Ile	Gln	Ile	Thr	His	Ile	Asn	Ala			
				195			200					205						
Glu	Val	Ala	Leu	Gln	Val	Phe	Gly	Asn	Phe	Leu	Tyr	Leu	Phe	Ser	Thr			
				210			215				220							
Ser	Thr	Leu	Leu	Gly	Ile	Ala	Thr	Gly	Leu	Ile	Thr	Ser	Phe	Val	Leu			
225					230					235					240			
Lys	Lys	Leu	Tyr	Phe	Ala	Arg	His	Ser	Thr	Thr	Arg	Glu	Leu	Ala	Ile			
				245					250					255				
Met	Met	Leu	Met	Ala	Tyr	Leu	Ser	Tyr	Met	Leu	Ala	Glu	Leu	Phe	Ser			
				260				265					270					
Leu	Ser	Gly	Ile	Leu	Thr	Val	Phe	Phe	Cys	Gly	Val	Leu	Met	Ser	His			
				275			280					285						
Val	Thr	Trp	His	Asn	Val	Thr	Glu	Ser	Ser	Arg	Ile	Thr	Ser	Arg	His			
						295					300							
Val	Phe	Ala	Met	Leu	Ser	Phe	Ile	Ala	Glu	Thr	Phe	Ile	Phe	Leu	Tyr			
305					310					315					320			
Val	Gly	Thr	Asp	Ala	Leu	Asp	Phe	Asp	Lys	Trp	Lys	Thr	Ser	Ser	Leu			
				325					330					335				
Ser	Phe	Gly	Gly	Thr	Leu	Gly	Val	Ser	Ala	Leu	Ile	Met	Ala	Leu	Val			
				340				345					350					
Leu	Leu	Gly	Arg	Ala	Ala	Phe	Val	Phe	Pro	Leu	Ser	Val	Leu	Thr	Asn			
				355			360					365						
Phe	Ser	Asn	Lys	His	Glu	Asn	Glu	Ser	Ile	Thr	Phe	Lys	His	Gln	Val			
						375					380							
Ile	Ile	Trp	Trp	Ala	Gly	Leu	Met	Arg	Gly	Ala	Val	Ser	Ile	Ala	Leu			
385					390					395					400			
Ala	Phe	Lys	Gln	Phe	Thr	Tyr	Ser	Gly	Val	Thr	Leu	Asp	Pro	Val	Asn			
				405					410					415				
Ala	Ala	Met	Val	Thr	Asn	Thr	Thr	Ile	Val	Val	Leu	Phe	Thr	Thr	Leu			
				420				425					430					
Val	Phe	Gly	Leu	Leu	Thr	Lys	Pro	Leu	Ile	Arg	Leu	Leu	Met	Pro	His			
				435			440					445						
Arg	His	Leu	Thr	Met	Leu	Ser	Asp	Asp	Ser	Thr	Pro	Lys	Ser	Leu	His			
				450			455				460							
Ser	Pro	Leu	Leu	Thr	Ser	Gln	Leu	Gly	Ser	Asp	Leu	Glu	Glu	Pro	Thr			
465					470					475					480			
Asn	Ile	Pro	Arg	Pro	Ser	Ser	Ile	Arg	Gly	Glu	Phe	Leu	Thr	Met	Thr			
				485					490					495				
Arg	Thr	Val	His	Arg	Tyr	Trp	Arg	Lys	Phe	Asp	Asp	Ala	Phe	Met	Arg			
				500				505					510					
Pro	Met	Phe	Gly	Gly	Arg	Gly	Phe	Val	Pro	Val	Val	Pro	Gly	Ser	Pro			
				515			520					525						
Ile	Glu	Arg	Ser	Val	Pro	Gln	Trp	Ser	Glu	Glu	Ala	His	Asn	Lys	Glu			
				530			535				540							
Pro																		
545																		

<210> 33
 <211> 541
 <212> PRT
 <213> Zea mays

<400> 33

Met	Gly	Leu	Gly	Val	Val	Ala	Glu	Leu	Val	Arg	Leu	Gly	Val	Leu	Ser	1	5	10	15
Ser	Thr	Ser	Asp	His	Ala	Ser	Val	Val	Ser	Ile	Asn	Leu	Phe	Val	Ala	20	25	30	
Leu	Leu	Cys	Ala	Cys	Ile	Val	Leu	Gly	His	Leu	Leu	Glu	Glu	Asn	Arg	35	40	45	
Trp	Val	Asn	Glu	Ser	Ile	Thr	Ala	Leu	Ile	Ile	Gly	Leu	Cys	Thr	Gly	50	55	60	
Val	Val	Ile	Leu	Leu	Thr	Thr	Lys	Gly	Lys	Ser	Ser	His	Ile	Leu	Val	65	70	75	
Phe	Ser	Glu	Asp	Leu	Phe	Phe	Ile	Tyr	Leu	Leu	Pro	Pro	Ile	Ile	Phe	85	90	95	
Asn	Ala	Gly	Phe	Gln	Val	Lys	Lys	Lys	Gln	Phe	Phe	Arg	Asn	Phe	Met	100	105	110	
Thr	Ile	Thr	Leu	Phe	Gly	Ala	Val	Gly	Thr	Met	Ile	Ser	Phe	Phe	Thr	115	120	125	
Ile	Ser	Leu	Gly	Ala	Leu	Gly	Leu	Ile	Ser	Arg	Leu	Asn	Ile	Gly	Ala	130	135	140	
Leu	Glu	Leu	Gly	Asp	Tyr	Leu	Ala	Leu	Gly	Ala	Ile	Phe	Ser	Ala	Thr	145	150	155	
Asp	Ser	Val	Cys	Thr	Leu	Gln	Val	Leu	Ser	Gln	Asp	Glu	Thr	Pro	Phe	165	170	175	
Leu	Tyr	Ser	Leu	Val	Phe	Gly	Glu	Gly	Val	Val	Asn	Asp	Ala	Thr	Ser	180	185	190	
Val	Val	Val	Phe	Asn	Ala	Leu	Gln	Asn	Phe	Asp	Ile	Thr	His	Ile	Asp	195	200	205	
Ala	Glu	Val	Val	Phe	His	Leu	Leu	Gly	Asn	Phe	Phe	Tyr	Leu	Phe	Leu	210	215	220	
Leu	Ser	Thr	Val	Leu	Gly	Val	Ala	Thr	Gly	Leu	Ile	Ser	Ala	Leu	Val	225	230	235	
Ile	Lys	Lys	Leu	Tyr	Phe	Gly	Arg	His	Ser	Thr	Asp	Arg	Glu	Val	Ala	245	250	255	
Leu	Met	Met	Leu	Met	Ala	Tyr	Leu	Ser	Tyr	Met	Leu	Ala	Glu	Leu	Phe	260	265	270	
Ala	Leu	Ser	Gly	Ile	Leu	Thr	Val	Phe	Phe	Gly	Cys	Ile	Val	Met	Ser	275	280	285	
His	Tyr	Thr	Trp	His	Asn	Val	Thr	Glu	Ser	Ser	Arg	Ile	Thr	Thr	Lys	290	295	300	
His	Ala	Phe	Ala	Thr	Leu	Ser	Phe	Leu	Ala	Glu	Thr	Phe	Leu	Phe	Leu	305	310	315	
Tyr	Val	Gly	Met	Asp	Ala	Leu	Asp	Ile	Asp	Lys	Trp	Arg	Ser	Val	Ser	325	330	335	
Asp	Thr	Pro	Gly	Lys	Ser	Leu	Ala	Ile	Ser	Ser	Ile	Leu	Met	Gly	Leu	340	345	350	
Val	Met	Val	Gly	Arg	Ala	Ala	Phe	Val	Phe	Pro	Leu	Ser	Phe	Leu	Ser	355	360	365	
Asn	Leu	Ala	Lys	Lys	Thr	Glu	His	Glu	Lys	Ile	Ser	Trp	Lys	Gln	Gln	370	375	380	
Val	Val	Ile	Trp	Trp	Ala	Gly	Leu	Met	Arg	Gly	Ala	Val	Ser	Met	Ala	385	390	395	
Leu	Ala	Tyr	Lys	Lys	Phe	Thr	Arg	Ala	Gly	His	Thr	Gln	Val	Arg	Gly	405	410	415	
Asn	Ala	Ile	Met	Ile	Thr	Ser	Thr	Ile	Ile	Val	Val	Leu	Phe	Ser	Thr	420	425	430	
Met	Val	Phe	Gly	Leu	Leu	Thr	Lys	Pro	Leu	Ile	Asn	Leu	Leu	Ile	Pro	435	440	445	

His	Arg	Asn	Ala	Thr	Ser	Met	Leu	Ser	Asp	Asp	Ser	Ser	Pro	Lys	Ser
450						455					460				
Leu	His	Ser	Pro	Leu	Leu	Thr	Ser	Gln	Leu	Gly	Ser	Asp	Leu	Glu	Glu
465						470				475					480
Pro	Thr	Asn	Ile	Pro	Arg	Pro	Ser	Ser	Ile	Arg	Gly	Glu	Phe	Leu	Thr
				485					490					495	
Met	Thr	Arg	Thr	Val	His	Arg	Tyr	Trp	Arg	Lys	Phe	Asp	Asp	Ala	Phe
			500					505					510		
Met	Arg	Pro	Met	Phe	Gly	Gly	Arg	Gly	Phe	Val	Pro	Phe	Val	Pro	Gly
		515					520					525			
Ser	Pro	Thr	Glu	Arg	Asn	Pro	Pro	Asp	Leu	Ser	Lys	Ala			
	530					535					540				

<210> 34

<211> 543

<212> PRT

<213> Gossypium hirsutum

<400> 34

Met	Val	Ala	Pro	Gln	Leu	Ala	Ala	Val	Phe	Thr	Lys	Leu	Gln	Thr	Leu
1				5					10					15	
Ser	Thr	Ser	Asp	His	Ala	Ser	Val	Val	Ser	Met	Asn	Ile	Phe	Val	Ala
			20					25					30		
Leu	Leu	Cys	Ala	Cys	Ile	Val	Ile	Gly	His	Leu	Leu	Glu	Glu	Asn	Arg
		35					40					45			
Trp	Met	Asn	Glu	Ser	Ile	Thr	Ala	Leu	Ile	Ile	Gly	Val	Phe	Thr	Gly
	50					55					60				
Val	Ile	Ile	Leu	Leu	Thr	Ser	Gly	Gly	Lys	Ser	Ser	His	Leu	Leu	Val
65					70				75						80
Phe	Ser	Glu	Asp	Leu	Phe	Phe	Ile	Tyr	Leu	Leu	Pro	Pro	Ile	Ile	Phe
				85				90					95		
Asn	Ala	Gly	Phe	Gln	Val	Lys	Lys	Lys	Gln	Phe	Phe	Arg	Asn	Phe	Ile
			100					105					110		
Thr	Ile	Met	Leu	Phe	Gly	Ala	Val	Gly	Thr	Leu	Ile	Ser	Cys	Thr	Ile
		115					120					125			
Ile	Ser	Leu	Gly	Val	Ile	Asn	Phe	Phe	Lys	Glu	Met	Asp	Ile	Gly	Ser
	130					135					140				
Leu	Asp	Ile	Gly	Asp	Phe	Leu	Ala	Ile	Gly	Ala	Ile	Phe	Ala	Ala	Thr
145					150					155					160
Asp	Ser	Val	Cys	Thr	Leu	Gln	Val	Leu	Asn	Gln	Asp	Glu	Thr	Pro	Leu
				165					170					175	
Leu	Tyr	Ser	Leu	Val	Phe	Gly	Glu	Gly	Val	Val	Asn	Asp	Ala	Thr	Ser
			180					185					190		
Val	Val	Leu	Phe	Asn	Ala	Ile	Gln	Ser	Phe	Asp	Leu	Val	Asn	Thr	Ser
		195					200					205			
Pro	Arg	Ile	Leu	Leu	Glu	Phe	Ile	Gly	Ser	Phe	Leu	Tyr	Leu	Phe	Leu
	210					215						220			
Ala	Ser	Thr	Met	Leu	Gly	Val	Ile	Val	Gly	Leu	Val	Ser	Ala	Tyr	Ile
225					230					235					240
Ile	Lys	Lys	Leu	Tyr	Phe	Gly	Arg	His	Ser	Thr	Asp	Arg	Glu	Phe	Ala
				245					250					255	
Leu	Met	Met	Leu	Met	Ala	Tyr	Leu	Ser	Tyr	Ile	Met	Ala	Glu	Leu	Phe
			260					265					270		
Tyr	Leu	Ser	Gly	Ile	Leu	Thr	Val	Phe	Phe	Cys	Gly	Ile	Val	Met	Ser
		275					280					285			
His	Tyr	Thr	Trp	His	Asn	Val	Thr	Glu	Ser	Ser	Arg	Val	Thr	Thr	Lys

290		295		300
His Ala Phe Ala Thr Leu Ser Phe Val Ala Glu Thr Phe Leu Phe Leu				
305		310		315
Tyr Val Gly Met Asp Ala Leu Asp Met Glu Lys Trp Arg Phe Val Ser				320
		325		330
Asp Ser Pro Gly Thr Ser Val Ala Val Ser Ala Val Leu Met Gly Leu				335
		340		345
Val Met Val Gly Arg Ala Ala Phe Val Phe Pro Leu Ser Phe Leu Ser				350
		355		360
Asn Leu Ala Lys Lys Ser Thr Ser Glu Lys Ile Ser Phe Arg Glu Gln				365
		370		375
Ile Ile Ile Trp Trp Ala Gly Leu Met Arg Gly Ala Val Ser Met Ala				380
385		390		395
Leu Ala Tyr Asn Gln Phe Thr Arg Gly Gly His Thr Gln Leu Arg Gly				400
		405		410
Asn Ala Ile Met Ile Thr Ser Thr Ile Thr Ile Val Leu Phe Ser Thr				415
		420		425
Val Val Phe Gly Leu Met Thr Lys Pro Leu Ile Arg Phe Leu Leu Pro				430
		435		440
His Pro Lys Pro Thr Ala Ser Met Leu Ser Asp Gln Ser Thr Pro Lys				445
450		455		460
Ser Met Glu Ala Pro Phe Leu Gly Ser Gly Gln Asp Ser Phe Asp Asp				465
465		470		475
Ser Leu Ile Gly Val His Arg Pro Asn Ser Ile Arg Ala Leu Leu Thr				480
		485		490
Thr Pro Ala His Thr Val His Tyr Tyr Trp Arg Lys Phe Asp Asn Ala				495
		500		505
Phe Met Arg Pro Met Phe Gly Gly Arg Gly Phe Val Pro Phe Val Pro				510
		515		520
Gly Ser Pro Thr Glu Arg Ser Glu Pro Asn Leu Pro Gln Trp Gln				525
530		535		540

<210> 35

<211> 557

<212> PRT

<213> Suaeda maritima

<400> 35

Met Trp Ser Gln Leu Ser Ser Phe Phe Ala Ser Lys Met Asp Met Val		
1	5	10
Ser Thr Ser Asp His Ala Ser Val Val Ser Met Asn Leu Phe Val Ala		15
	20	25
Leu Leu Cys Gly Cys Ile Val Ile Gly His Leu Leu Glu Glu Asn Arg		30
	35	40
Trp Met Asn Glu Ser Ile Thr Ala Leu Leu Ile Gly Leu Ser Thr Gly		45
	50	55
Ile Ile Ile Leu Leu Ile Ser Gly Gly Lys Ser Ser His Leu Leu Val		60
65	70	75
Phe Ser Glu Asp Leu Phe Phe Ile Tyr Leu Leu Pro Pro Ile Ile Phe		80
	85	90
Asn Ala Gly Phe Gln Val Lys Lys Lys Gln Phe Phe Arg Asn Phe Ile		95
	100	105
Thr Ile Ile Leu Phe Gly Ala Val Gly Thr Leu Val Ser Phe Ile Ile		110
	115	120
Ile Ser Leu Gly Ser Ile Ala Ile Phe Gln Lys Met Asp Ile Gly Ser		125
130	135	140

Leu	Glu	Leu	Gly	Asp	Leu	Leu	Ala	Ile	Gly	Ala	Ile	Phe	Ala	Ala	Thr
145					150					155					160
Asp	Ser	Val	Cys	Thr	Leu	Gln	Val	Leu	Asn	Gln	Asp	Glu	Thr	Pro	Leu
				165						170					175
Leu	Tyr	Ser	Leu	Val	Phe	Gly	Glu	Gly	Val	Val	Asn	Asp	Ala	Thr	Ser
			180					185					190		
Val	Val	Leu	Phe	Asn	Ala	Ile	Gln	Asn	Phe	Asp	Leu	Thr	His	Ile	Asp
		195					200					205			
His	Arg	Ile	Ala	Tyr	Arg	Ile	Ala	Phe	Gln	Phe	Gly	Gly	Asn	Phe	Leu
210						215					220				
Tyr	Leu	Phe	Phe	Ala	Ser	Thr	Leu	Leu	Gly	Ala	Val	Thr	Gly	Leu	Leu
225						230				235					240
Ser	Ala	Tyr	Val	Ile	Lys	Lys	Leu	Tyr	Phe	Gly	Arg	His	Ser	Thr	Asp
				245					250					255	
Arg	Glu	Val	Ala	Leu	Met	Met	Leu	Met	Ala	Tyr	Leu	Ser	Tyr	Met	Leu
			260					265					270		
Ala	Glu	Leu	Phe	Tyr	Leu	Ser	Gly	Ile	Leu	Thr	Val	Phe	Phe	Cys	Gly
		275					280					285			
Ile	Val	Met	Ser	His	Tyr	Thr	Trp	His	Asn	Val	Thr	Glu	Ser	Ser	Arg
290						295					300				
Val	Thr	Thr	Lys	His	Ala	Phe	Ala	Thr	Leu	Ser	Phe	Val	Ala	Glu	Ile
305					310					315					320
Phe	Ile	Phe	Leu	Tyr	Val	Gly	Met	Asp	Ala	Leu	Asp	Ile	Glu	Lys	Trp
			325					330						335	
Arg	Phe	Val	Ser	Asp	Ser	Pro	Gly	Thr	Ser	Val	Ala	Val	Ser	Ser	Ile
		340						345					350		
Leu	Leu	Gly	Leu	Leu	Met	Val	Gly	Arg	Ala	Leu	Leu	Phe	Ser	Leu	Val
		355					360					365			
Phe	Leu	Met	Asn	Leu	Ser	Lys	Lys	Ser	Asn	Ser	Glu	Lys	Val	Thr	Phe
370						375					380				
Asn	Gln	Gln	Ile	Val	Ile	Trp	Trp	Ala	Gly	Leu	Met	Arg	Gly	Ala	Val
385					390					395					400
Ser	Val	Ala	Leu	Ala	Tyr	Asn	Gln	Phe	Ser	Arg	Ser	Gly	His	Thr	Gln
			405					410					415		
Leu	Arg	Gly	Asn	Ala	Ile	Met	Ile	Thr	Ser	Thr	Ile	Thr	Val	Val	Leu
			420					425					430		
Phe	Ser	Thr	Met	Val	Phe	Gly	Leu	Leu	Thr	Lys	Pro	Leu	Ile	Leu	Phe
		435				440						445			
Met	Leu	Pro	Gln	Pro	Lys	His	Phe	Thr	Ser	Ala	Ser	Thr	Val	Ser	Asp
450					455						460				
Leu	Gly	Ser	Pro	Lys	Ser	Phe	Ser	Leu	Pro	Leu	Leu	Glu	Asp	Arg	Gln
465					470					475					480
Asp	Ser	Glu	Ala	Asp	Leu	Gly	Asn	Asp	Asp	Glu	Glu	Ala	Tyr	Pro	Arg
			485					490					495		
Gly	Thr	Ile	Ala	Arg	Pro	Thr	Ser	Leu	Arg	Met	Leu	Leu	Asn	Ala	Pro
		500						505					510		
Thr	His	Thr	Val	His	His	Tyr	Trp	Arg	Arg	Phe	Asp	Asp	Tyr	Phe	Met
		515					520					525			
Arg	Pro	Val	Phe	Gly	Gly	Arg	Gly	Phe	Val	Pro	Phe	Val	Pro	Gly	Ser
530						535					540				
Pro	Thr	Glu	Gln	Ser	Thr	Thr	Asn	Leu	Ser	Gln	Arg	Thr			
545					550					555					

<210> 36

<211> 538

<212> PRT

<213> Hordeum vulgare

<400> 36

Met	Ala	Phe	Glu	Val	Val	Ala	Ala	Gln	Leu	Ala	Arg	Leu	Ser	Asp	Ala	1	5	10	15
Leu	Ala	Thr	Ser	Asp	His	Ala	Ser	Val	Val	Ser	Ile	Asn	Leu	Phe	Val	20	25	30	
Ala	Leu	Leu	Cys	Ala	Cys	Ile	Val	Leu	Gly	His	Leu	Leu	Glu	Glu	Asn	35	40	45	
Arg	Trp	Leu	Asn	Glu	Ser	Ile	Thr	Ala	Leu	Ile	Ile	Gly	Leu	Cys	Thr	50	55	60	
Gly	Val	Val	Ile	Leu	Met	Thr	Thr	Lys	Gly	Lys	Ser	Ser	His	Val	Leu	65	70	75	80
Val	Phe	Ser	Glu	Asp	Leu	Phe	Phe	Ile	Tyr	Leu	Leu	Pro	Pro	Ile	Ile	85	90	95	
Phe	Asn	Ala	Gly	Phe	Gln	Val	Lys	Lys	Lys	Gln	Phe	Phe	Arg	Asn	Phe	100	105	110	
Met	Thr	Ile	Thr	Leu	Phe	Gly	Ala	Val	Gly	Thr	Met	Ile	Ser	Phe	Phe	115	120	125	
Thr	Ile	Ser	Leu	Ala	Ala	Ile	Ala	Ile	Phe	Ser	Lys	Met	Asn	Ile	Gly	130	135	140	
Thr	Leu	Asp	Val	Ser	Asp	Phe	Leu	Ala	Ile	Gly	Ala	Ile	Phe	Ser	Ala	145	150	155	160
Thr	Asp	Ser	Val	Cys	Thr	Leu	Gln	Val	Leu	Asn	Gln	Asp	Glu	Thr	Pro	165	170	175	
Phe	Leu	Tyr	Ser	Leu	Val	Phe	Gly	Glu	Gly	Val	Val	Asn	Asp	Ala	Thr	180	185	190	
Ser	Val	Val	Leu	Phe	Asn	Ala	Leu	Gln	Asn	Phe	Asp	Pro	Asn	Gln	Ile	195	200	205	
Asp	Ala	Ile	Val	Ile	Leu	Lys	Phe	Leu	Gly	Asn	Phe	Cys	Tyr	Leu	Phe	210	215	220	
Val	Ser	Ser	Thr	Phe	Leu	Gly	Val	Phe	Ser	Gly	Leu	Leu	Ser	Ala	Tyr	225	230	235	240
Ile	Ile	Lys	Lys	Leu	Tyr	Ile	Gly	Arg	His	Ser	Thr	Asp	Arg	Glu	Val	245	250	255	
Ala	Leu	Met	Met	Leu	Met	Ala	Tyr	Leu	Ser	Tyr	Met	Leu	Ala	Glu	Leu	260	265	270	
Leu	Asp	Leu	Ser	Gly	Ile	Leu	Thr	Val	Phe	Phe	Cys	Gly	Ile	Val	Met	275	280	285	
Ser	His	Tyr	Thr	Trp	His	Asn	Val	Thr	Glu	Ser	Ser	Arg	Val	Thr	Thr	290	295	300	
Lys	His	Ala	Phe	Ala	Thr	Leu	Ser	Phe	Ile	Ala	Glu	Thr	Phe	Leu	Phe	305	310	315	320
Leu	Tyr	Val	Gly	Met	Asp	Ala	Leu	Asp	Ile	Glu	Lys	Trp	Lys	Phe	Ala	325	330	335	
Ser	Asp	Ser	Pro	Gly	Lys	Ser	Ile	Gly	Ile	Ser	Ser	Ile	Leu	Leu	Gly	340	345	350	
Leu	Val	Leu	Val	Gly	Arg	Ala	Ala	Phe	Val	Phe	Pro	Leu	Ser	Phe	Leu	355	360	365	
Ser	Asn	Leu	Thr	Lys	Lys	Thr	Glu	Leu	Glu	Lys	Ile	Ser	Trp	Arg	Gln	370	375	380	
Gln	Ile	Val	Ile	Trp	Trp	Ala	Gly	Leu	Met	Arg	Gly	Ala	Val	Ser	Ile	385	390	395	400
Ala	Leu	Ala	Tyr	Asn	Lys	Phe	Thr	Arg	Ser	Gly	His	Thr	Gln	Leu	His	405	410	415	
Gly	Asn	Ala	Ile	Met	Ile	Thr	Ser	Thr	Ile	Thr	Val	Val	Leu	Phe	Ser	420	425	430	

Thr Met Leu Phe Gly Ile Leu Thr Lys Pro Leu Ile Arg Phe Leu Leu
 435 440 445
 Pro Ala Ser Ser Asn Gly Asp Pro Ser Glu Pro Ser Ser Pro Lys Ser
 450 455 460
 Leu His Ser Pro Leu Leu Thr Ser Met Leu Gly Ser Asp Met Glu Ala
 465 470 475 480
 Pro Leu Pro Ile Val Arg Pro Ser Ser Leu Arg Met Leu Ile Thr Lys
 485 490 495
 Pro Thr His Thr Ile His Tyr Tyr Trp Arg Lys Phe Asp Asp Ala Leu
 500 505 510
 Met Arg Pro Met Phe Gly Gly Arg Gly Phe Val Pro Tyr Ser Pro Gly
 515 520 525
 Ser Pro Thr Asp Pro Asn Val Ile Val Ala
 530 535

<210> 37
 <211> 540
 <212> PRT
 <213> Hordeum brevisubulatum

<400> 37
 Met Gly Trp Gly Leu Gly Asp Pro Pro Ala Asp Tyr Gly Ser Ile Met
 1 5 10 15
 Ala Val Gly Leu Phe Val Ala Leu Met Cys Ile Cys Ile Ile Val Gly
 20 25 30
 His Leu Leu Glu Glu Asn Arg Trp Met Asn Glu Ser Thr Thr Ala Leu
 35 40 45
 Leu Leu Gly Leu Gly Ala Gly Thr Val Ile Leu Phe Ala Ser Ser Gly
 50 55 60
 Lys Asn Ser Arg Leu Met Val Phe Ser Glu Asp Leu Phe Phe Ile Tyr
 65 70 75 80
 Leu Leu Pro Pro Ile Ile Phe Asn Ala Gly Phe Gln Val Lys Lys Lys
 85 90 95
 Gln Phe Phe Arg Asn Phe Met Thr Ile Thr Leu Phe Ala Val Val Gly
 100 105 110
 Thr Leu Ile Ser Phe Ser Ile Ile Ser Leu Gly Ala Met Gly Leu Ile
 115 120 125
 Ser Arg Leu Asn Ile Gly Ala Leu Glu Leu Gly Asp Tyr Leu Ala Leu
 130 135 140
 Gly Ala Ile Phe Ser Ala Thr Asp Ser Val Cys Thr Leu Gln Val Leu
 145 150 155 160
 Ser Gln Asp Glu Thr Pro Phe Leu Tyr Ser Leu Val Phe Gly Glu Gly
 165 170 175
 Val Val Asn Asp Ala Thr Ser Val Val Leu Phe Asn Ala Ile Gln Asn
 180 185 190
 Phe Asp Leu Gly Asn Phe Ser Ser Leu Lys Phe Leu Gln Phe Ile Gly
 195 200 205
 Asn Phe Leu Tyr Leu Phe Gly Ala Ser Thr Phe Leu Gly Val Ala Ser
 210 215 220
 Gly Leu Leu Ser Ala Tyr Val Ile Lys Lys Leu Tyr Phe Gly Arg His
 225 230 235 240
 Ser Thr Asp Arg Glu Val Ala Ile Met Met Leu Met Ala Tyr Leu Ser
 245 250 255
 Tyr Met Leu Ala Glu Leu Leu Asp Leu Ser Gly Ile Leu Thr Val Phe
 260 265 270
 Phe Cys Gly Ile Val Met Ser His Tyr Thr Trp His Asn Val Thr Glu

	275					280					285				
Ser	Ser	Arg	Val	Thr	Thr	Lys	His	Ala	Phe	Ala	Thr	Leu	Ser	Phe	Ile
	290					295					300				
Ser	Glu	Thr	Phe	Leu	Phe	Leu	Tyr	Val	Gly	Met	Asp	Ala	Leu	Asp	Ile
305					310					315					320
Glu	Lys	Trp	Lys	Ile	Val	Ser	Glu	Thr	Tyr	Ser	Pro	Met	Lys	Ser	Ile
			325						330					335	
Thr	Leu	Ser	Ser	Ile	Ile	Leu	Ala	Leu	Val	Leu	Val	Ala	Arg	Ala	Ala
		340						345					350		
Phe	Val	Phe	Pro	Leu	Ser	Tyr	Leu	Ser	Asn	Leu	Thr	Lys	Lys	Thr	Ala
	355					360						365			
Gly	Glu	Lys	Ile	Ser	Ile	Arg	Gln	Gln	Val	Ile	Ile	Trp	Trp	Ala	Gly
370					375						380				
Leu	Met	Arg	Gly	Ala	Val	Ser	Ile	Ala	Leu	Ala	Tyr	Asn	Lys	Phe	Ala
385					390					395					400
Lys	Ser	Gly	His	Thr	Gln	Leu	Pro	Ser	Asn	Ala	Ile	Met	Ile	Thr	Ser
			405						410					415	
Thr	Ile	Ile	Ile	Val	Leu	Phe	Ser	Thr	Ile	Val	Phe	Gly	Leu	Leu	Thr
		420						425					430		
Lys	Pro	Leu	Ile	Arg	Leu	Leu	Ile	Pro	Ala	Arg	His	Leu	Thr	Arg	Glu
	435						440					445			
Val	Ser	Ala	Leu	Ser	Glu	Pro	Ser	Ser	Pro	Lys	Ser	Phe	Leu	Glu	Gln
450						455					460				
Leu	Thr	Val	Asn	Gly	Pro	Glu	Thr	Asp	Val	Glu	Asn	Gly	Val	Ser	Ile
465				470					475						480
Arg	Arg	Pro	Thr	Ser	Leu	Arg	Met	Leu	Leu	Ala	Ser	Pro	Thr	Arg	Ser
			485					490						495	
Val	His	His	Tyr	Trp	Arg	Lys	Phe	Asp	Asn	Ala	Phe	Met	Arg	Pro	Val
	500							505					510		
Phe	Gly	Gly	Arg	Gly	Phe	Val	Pro	Phe	Val	Pro	Gly	Ser	Pro	Thr	Glu
	515					520					525				
Ser	Ser	Val	Pro	Leu	Leu	Ala	His	Gly	Ser	Glu	Asn				
	530					535					540				

<210> 38

<211> 546

<212> PRT

<213> Hordeum vulgare

<400> 38

Met	Gly	Pro	Asp	Leu	Gly	Ala	Leu	Ala	Leu	Arg	Tyr	Thr	Gly	Leu	Ala
1				5					10					15	
Val	Ser	Asp	His	Asp	Ser	Ile	Val	Ala	Ile	Asn	Ile	Phe	Ile	Ala	Leu
		20						25					30		
Leu	Cys	Gly	Cys	Ile	Val	Phe	Gly	His	Leu	Leu	Glu	Gly	Asn	Arg	Trp
	35						40					45			
Val	Asn	Glu	Ser	Thr	Thr	Ala	Ile	Val	Leu	Gly	Leu	Ile	Thr	Gly	Gly
50						55					60				
Val	Ile	Leu	Leu	Cys	Thr	Lys	Gly	Val	Asn	Ser	Arg	Ile	Leu	Ile	Phe
65				70					75					80	
Ser	Glu	Asp	Ile	Phe	Phe	Ile	Tyr	Leu	Leu	Pro	Pro	Ile	Ile	Phe	Asn
			85					90					95		
Ala	Gly	Phe	Gln	Val	Lys	Lys	Lys	Gln	Phe	Phe	Arg	Asn	Phe	Ala	Thr
		100						105					110		
Ile	Ile	Leu	Phe	Gly	Ala	Val	Gly	Thr	Leu	Ile	Ser	Phe	Val	Ile	Ile
	115						120						125		

